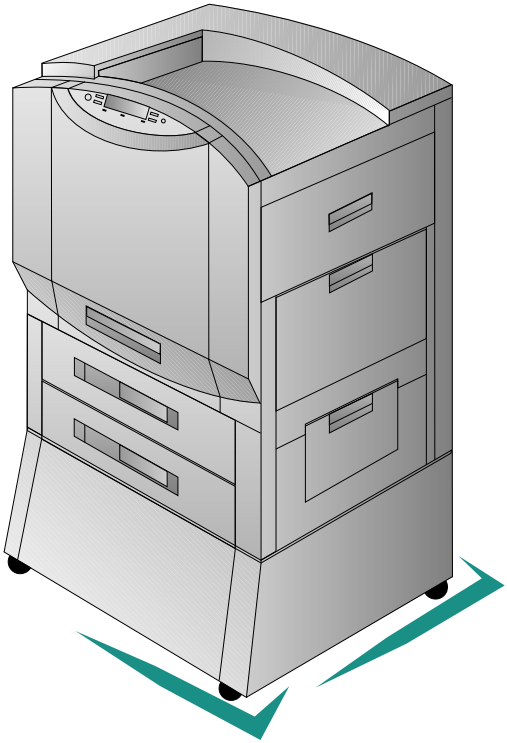
HEWLETT® PACKARD

Color LaserJet™

8500, 8500 N, 8500 DN Printer

User's Guide



English

Take a look at all HP Support has to offer!

Thank you for your purchase. Along with your product, you receive a variety of support services from Hewlett-Packard and our support partners designed to give you the results you need, quickly and professionally.

Online Services: for 24-hour access to information over your modem, we suggest these services.	**World Wide Web URL**—Printer drivers, updated HP printer software, plus product and support information can be obtained from the following URLs: in the U.S.: http://www.hp.com in Europe: http://www2.hp.com Printer drivers can be obtained from the following sites: in Japan: ftp://www.jpn.hp.com/drivers/ in Korea: http://www.hp.co.kr in Taiwan: http://www.hp.com.tw or from a local driver website of http://www.dds.com.tw
	HP Bulletin Board Service—Our electronic download service provides convenient access to HP printer drivers, updated HP printer software, product information, and troubleshooting hints. Set your communication software to N,8,1 and dial or use: in the U.S. and Canada: (1) (208) 344-1691 in Taiwan: (886) (2) 923-3233 in Korea: HITEL or CHOLIAN (Go HPK) in Australia: (61) (3) 9890-0276 in New Zealand: (64) (9) 356-3660 in China: (86) (10) 6261-4172 European Bulletin Board Service numbers are listed at http://www2.hp.com.
	America OnLine—(America OnLine/Bertelsmann is available in France, Germany, and the UK)—Printer drivers, updated HP printer software, and support documentation are available to help answer questions on HP products. Use Keyword HP to start your tour or call (1) (800) 827-6364 and ask for representative #1118 to subscribe.
	CompuServe—Printer drivers, updated HP printer software, and interactive sharing of technical information with other members are available on CompuServe's HP User's forums (GO HP), or call (1) (800) 524-3388 and ask for representative #51 to subscribe. (CompuServe is also available in the UK, France, Belgium, Switzerland, Germany, and Austria.)
Obtaining Software: **For U.S. and Canada:**	Phone: (1) (970) 339-7009 **Mail:** Hewlett-Packard Company **Fax:** (1) (970) 330-7655 P.O. Box 1754 Greeley, CO 80632 USA
For Asia-Pacific Countries/Regions:	Contact Fulfill Plus at (65) 740-4477 (Hong Kong, Indonesia, Malaysia, Philippines, or Singapore). For Korea, call (82) (2) 3270-0805 or (82) (2) 3270-0893.
For Australia, New Zealand, and India:	For Australia and New Zealand, call (61) (2) 565-6099. For India, call (91) (11) 682-6035.
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HP FIRST: HP FIRST Fax will deliver detailed troubleshooting information on common software and troubleshooting tips for your HP product. Call from any touch-tone phone and request up to three documents per call. These documents will be sent to the fax of your choice.

Australia	(61) (3) 9272-2627	Korea	(82) (2) 769-0543
Austria	(43) (1) 0660-8128	Malaysia	(60) (3) 298-2478
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Denmark	(45) 8001-0453	Portugal	(351) (1) 0505-313342
English (outside of UK)	(31) (20) 681-5792	Singapore	(65) 275-7251
Finland	(358) (9) 0800-13134	Spain	(34) (90) 099-3123
France	(01) (43) 623-444	Sweden	(46) (2) 079-5743
Germany	(49) (13) 081-0061	Switzerland (French)	(41) (1) 0800-551526
Hong Kong	(852) 2506-2422	Switzerland (German)	(41) (1) 0800-551527
Hungary	(36) (1) 252-4647	Taiwan	(886) (2) 719-5589
India	(91) (11) 682-6035	Thailand	(66) (2) 661-3511
Indonesia	(62) (21) 352-2044	United Kingdom	(44) (134) 0800-960271
Italy	(39) (2) 1678-59020	United States	(1) (800) 333-1917
Japan	(81) (3) 3335-8622		

Customer Support Options Worldwide

In addition to the phone numbers listed below, appendix E, “Warranty and Support Information,” contains worldwide sales and service addresses and phone numbers for countries/regions not listed here.

Customer Support & Product Repair Assistance for the U.S. and Canada:	Call (1) (208) 323-2551 Monday through Friday from 6 am to 6 pm (Mountain Time) *free of charge during the Warranty Period. However, your standard long-distance phone charges still apply.* Have your serial number ready when calling.
(See the warranty in appendix E for additional product repair information.)	Post-warranty telephone assistance is available to answer your product questions. Call (1) (900) 555-1500 ($2.50* per minute, U.S. only) or call (1) (800) 999-1148 ($25* per call, Visa or MasterCard, U.S. and Canada). *Charges begin only when you connect with a support technician. *Prices subject to change.*

European Customer Support Center Language and In-Country Options Available
Open Monday through Friday 8:30 to 18:00 CET

HP provides a free telephone support service during the warranty period. By calling a telephone number listed below, you will be connected to a responsive team waiting to help you. If you require support after your warranty has expired, you can receive support for a fee through the same telephone number. The fee is charged on a per-incident basis. When calling HP, please have the following information ready: product name and serial number, date of purchase, and description of the problem.

Danish:	Denmark	(45) 3929-4099	**German:**	Austria	(43) (1) 0660-6386
Dutch:	Belgium	(32) (2) 626-8806		Germany	(49) (180) 525-8143
	Netherlands	(31) (20) 606-8751	**Italian:**	Italy	(39) (2) 264-10350
English:	Ireland	(353) (1) 662-5525	**Norwegian:**	Norway	(47) 2211-6299
	UK	(44) (171) 512-5202	**Portuguese:**	Portugal	(351) (1) 441-7199
	International	(44) (171) 512-5202	**Spanish:**	Spain	(34) (90) 232-1123
Finnish:	Finland	(358) (9) 0203-47288	**Swedish:**	Sweden	(46) (8) 619-2170
French:	Belgium	(32) (2) 626-8807			
	France	(01) (43) 623-434			
	Switzerland	(41) (84) 880-1111			

In-country/region Support Numbers
If you require support after your warranty has expired or additional product repair services, or if your country/region is not listed below, see “Worldwide HP Sales and Service Offices” in appendix E.

Argentina	(54) (1) 781-4059 (54) (1) 781-4069	Malaysia	(60) (3) 295-2566
Australia	(61) (3) 272-8000	México D.F.	(52) (5) 326-4600
Brazil	(55) (11) 709-1444	México Guadalajara	(52) (3) 669-9500
Canada	(1) (208) 323-2551	México Monterey	(52) (83) 378-4240
China	(86) (10) 6261-4174 (86) (10) 6261-4175 (86) (10) 6261-4176 (86) (10) 6262-5666	Middle East/Africa	(41) (22) 780-7111
		New Zealand	(64) (9) 356-6640
		Philippines	(63) (2) 894-1451
		Poland	(48) (22) 37-5065
		Portugal	(351) (1) 301-7330
Czech Republic	(42) (2) 471-7321	Russia	(7) (95) 923-5001
Greece	(30) (1) 689-6411	Singapore	(65) 272-5300
Hong Kong	(852) 800-7729	Switzerland	(41) (1) 753-7111
Hungary	(36) (1) 343-0310	Taiwan	(886) (2) 717-0055
India	(91) (11) 682-6035 (91) (11) 682-6069	Thailand	(66) (2) 661-4011 (66) (2) 661-4012
Indonesia	(62) (21) 350-3408	Turkey	(90) (1) 224-5925
Japan	(81) (3) 3335-8333		
Korea	(82) (2) 3270-0700; outside Seoul, call (82) (80) 999-0700		

HP Color LaserJet 8500, 8500 N, 8500 DN Printer

User’s Guide

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Chapter 1

The HP Color LaserJet 8500 Printer

Features

Congratulations on your purchase of the HP Color LaserJet 8500, 8500 N, or 8500 DN printer. This printer is designed to produce high-quality, high-speed color printouts for business environments.

This printer provides the quality and reliability of Hewlett-Packard printers as well as these specific features:

Performance

- 24 pages per minute (ppm) black and white printing
- 6 ppm color printing

Approximate Print Speeds

- **Letter-, A4-sized media:** 24 ppm black and white; 6 ppm color
- **Legal-, Executive-, 11-by-17 inch sized media:** 12 ppm black and white; 3 ppm color
- **Transparencies:** 2.8 ppm black and white; 2.1 ppm color
- **Labels:** 12 ppm black and white; 3 ppm color

Paper Handling

- Printing on 12-by-18.50 inch (304.80-by-469.90 mm) sized media
- Printing on heavy media up to 58 lb (216 g/m^2) bond
- Two 500-sheet input trays (trays 2 and 3) that support letter-, legal-, and A4-sized media; 11-by-17 inch and A3-sized media supported by tray 3 only
- A 100-sheet multipurpose tray that supports letter-, legal-, executive-, A3-, A4-, B4-, 11-by-17 inch, B5-, and custom-sized media, as well as envelopes, labels, and card stock
- Face-down (top) output bin
- Printer driver selectable face-up (left) output bin with straight-through paper path

Font and Memory

- 24 MB standard DIMM (dual inline memory module) memory, expandable to 128 MB DIMM*
- HP LaserJet 45 TrueType font set
- HP FontSmart utility, which provides 65 additional TrueType fonts for Microsoft® Windows 3.1, Windows 95, and Windows NT 4.0
- Supports forms and fonts

Printer Personality Support

- PCL5 color extension support in the printer
- Automatic printer personality switching
- PostScript™ support

User Interface and EIO

- Standard ECP or bidirectional parallel cable interface (IEEE-1284 compliant)
- 2 enhanced input/output (EIO) slots
- Automatic I/O (input/output) switching
- HP JetAdmin software for Windows NT 4.0, Windows NT 5.0, Novell NetWare, and OS/2 Warp Server

Accessories

- Optional printer hard disk, which provides storage for fonts and macros as well as proof and print and mopying capabilities (multiple original prints)
- Optional ROM (read-only memory) or synchronous DRAM (dynamic random-access memory) DIMM device memory
- Optional multi-bin mailbox, which provides multiple output destinations
- Optional 2,000-sheet input tray (tray 4)
- Optional duplexer, which provides two-sided printing
- Optional HP JetDirect 600N internal print server for network connections

* To expand the DIMM memory to 128 MB, install 16 MB DIMMs in all eight DIMM slots.

For more information on supported media, see “Selecting Media” in chapter 3.

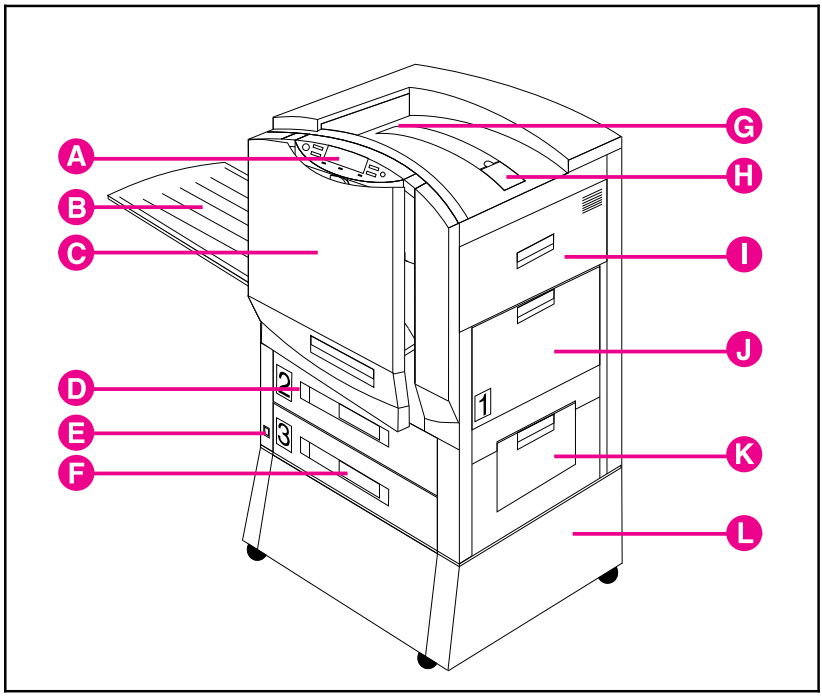
The approximate print speeds offered by this printer might vary from those listed above because the following factors affect processing time:

- Complex graphics or large graphics
- I/O configuration
- Type of computer
- Computer configuration
- Amount of printer memory
- Network operating system
- Network configuration

Locating the Printer's Parts

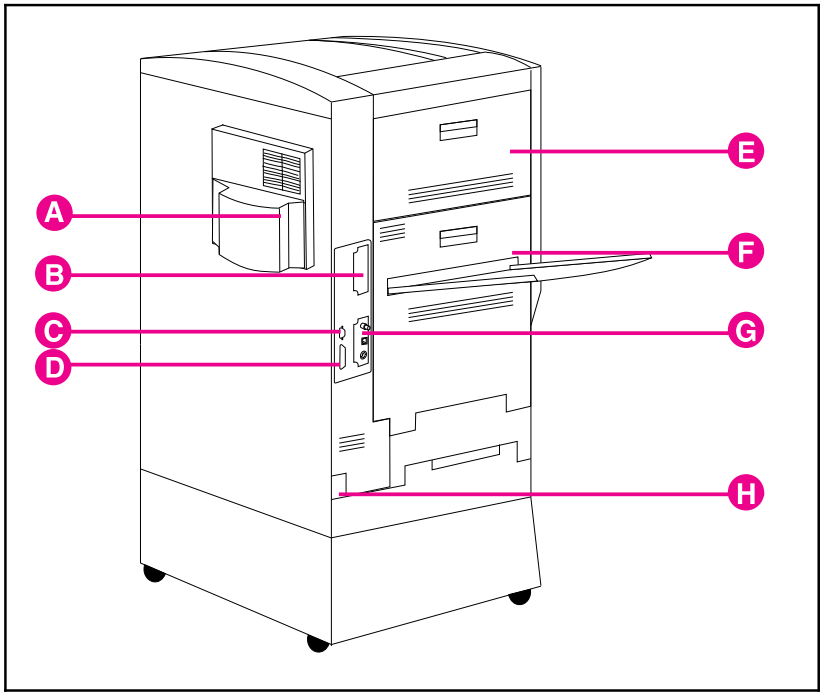
The following figures show the locations of the printer's parts.

Figure 1



A Printer Control Panel
B Left Output Bin (face up)
C Front Door
D Input Tray 2
E Power Button
F Input Tray 3
G Top Output Bin (face down)
H Flip-Up Media Stop
I Upper Right Door
J Input Tray 1
K Lower Right Door
L Printer Stand

Figure 2



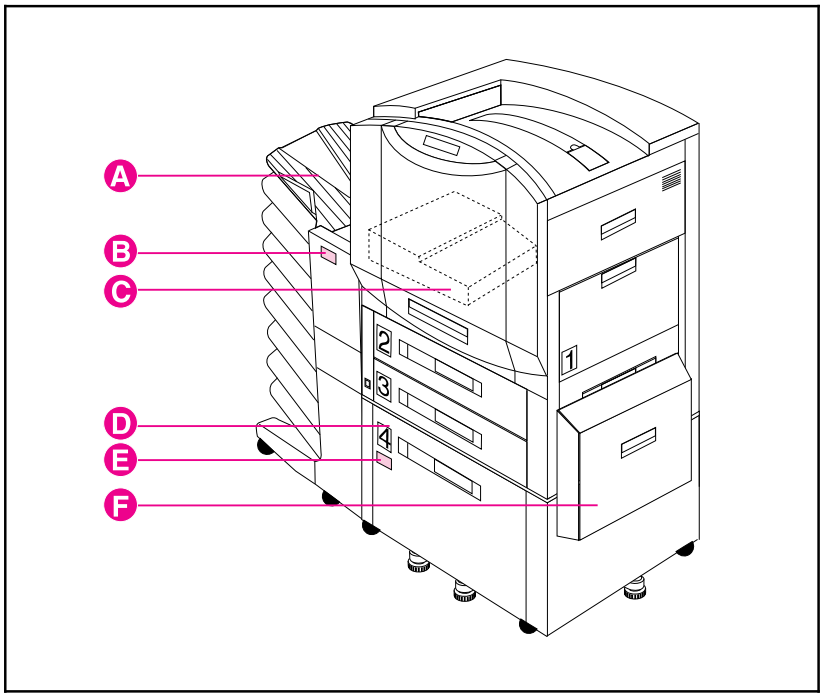
A Air Filter Door
B EIO Slot 2
C Tray 4 Connector (C-Link Connector)
D Parallel Connector
E Upper Left Door
F Lower Left Door
G EIO Slot 1 (shown with optional HP JetDirect internal print server)
H Power Connector

Note For information on the locations of printer consumables, see “Locating Printer Consumables” in chapter 7.

Optional Paper Handling Accessories and Status Lights

The following figure shows the locations of optional or packaged accessories and their status lights (if applicable).

Figure 3



A Multi-bin Mailbox
B Multi-bin Mailbox Status Light
C Duplexer (internal)
D Optional Tray 4 (2,000-Sheet Input Tray)
E Tray 4 Status Light
F Media Transfer Door

Use the following table to interpret the status lights on tray 4 and the multi-bin mailbox.

Light	Tray 4	Multi-Bin Mailbox
Solid Green	The accessory is on and ready.	The accessory is on and ready.
Solid Amber	The accessory is experiencing a hardware malfunction.	The accessory is experiencing a hardware malfunction.
Flashing Amber	The accessory has a media jam or a page needs to be removed from tray 4, even if the page is not jammed. The lower right door might be open.	The accessory has a media jam or a page needs to be removed from the multi-bin mailbox, even if the page is not jammed. The accessory is not correctly attached to the printer.
Off	The printer might be in Power Save mode. Press **Go**. The accessory is not receiving power. Check both the power supply and the power cables.	The printer might be in Power Save mode. Press **Go**. The accessory is not receiving power. Check both the power supply and the power cables.

Finding Information About the Printer



Getting Started Guide provides information on installing the hardware and software for the printer.



Quick Reference Guide provides information at the printer on media jams, loading media, and common printer control panel messages.



Online Help provides information at your computer about the printer software and printer drivers.



Online User's Guide provides information at your computer on the printer hardware, troubleshooting, and customer service.

Chapter 2

Using the Printer Control Panel

Overview

The most convenient way to control the printer is through your application or the printer driver. The commands in your application override the printer control panel settings. For more information on changing the printer settings from within an application or printer driver, see the associated online help files.

Use the printer control panel to configure the default settings for the printer or to obtain printer status information. Also, use the printer control panel to access printer features not supported by the application.

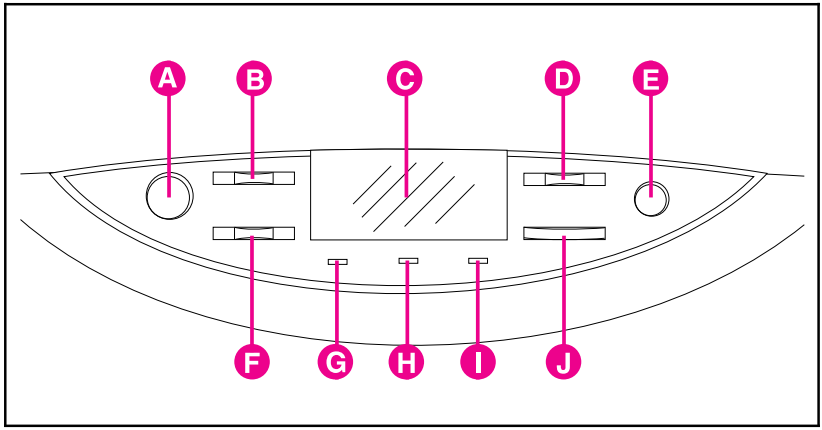
Note Unless otherwise specified, *control panel* refers to the control panel on the printer. Keys on the printer control panel are indicated by the **Key** font.

Note For more information on controlling the printer in a network environment, see the HP JetDirect software installation guide and the HP JetAdmin online help.

Printer Control Panel Keys and Indicator Lights

The following figure shows the locations of printer control panel features.

Figure 4



A Go
Brings the printer online or offline, and exits menus.

B Menu
Accesses the printer control panel menus to set the printer defaults. This key permits both forward and backward movement through the list of available menus.

C Display
Presents data about the printer (such as printer status, required actions, or data and print errors) in one or two lines of characters.

D – Value +
Steps through the value choices for a particular menu item using –/+. This key permits both forward and backward movement through the values.

E Cancel Job
Stops the currently printing job from printing. If no job is printing and the display indicates that a job is processing, **Cancel Job** cancels the currently processing job and the next job begins printing. While the job is being canceled, CANCELING JOB is displayed.

F Item
Steps through the items in a particular menu. This key permits both forward and backward movement through the available items.

G Ready Indicator (green)

- On—The printer is online and able to accept and process data.
- Off—The printer is offline and unable to accept or process data.
- Flashing—The printer is going from online to offline, or from offline to online.

H Data Indicator (green)

- On—Data is in the printer buffer, or the printer is processing data.
- Off—The printer buffer is empty.
- Flashing—The printer is receiving or processing data.

I Attention Indicator (amber)

- On—An error has occurred in the printer.
- Off—The printer does not require attention.
- Flashing—The printer requires attention.

J Select
Selects the item or value currently shown on the printer control panel display. An asterisk (*) is displayed when an item has been selected.

For information on the status lights for the optional multi-bin mailbox and the optional tray 4, see “Optional Paper Handling Accessories and Status Lights” in chapter 1.

When to Use the Printer Control Panel Menus

The printer control panel menus allow you to select items such as the number of copies and test pages. Use the printer control panel to perform the following tasks:

- Set the media type for each input tray
- Continue a proof and print job
- Switch between online and offline status
- Print configuration pages
- Set the printer defaults when the application does not support the option
- Change the printer's EIO configuration
- Make a selection that your application does not allow you to make
- Print a file directory page to identify the fonts and macros available on the printer hard disk

Using the Printer Control Panel in Shared Environments

The printer control panel functions in a network or other shared-printer environment in the same way as it does when it is connected to a standalone computer. Follow these guidelines before you change printer control panel settings:

- Set the paper type (and size for tray 1 in Cassette mode) in the printer control panel whenever changing or loading media in the input trays. Configuring the media type (and size for tray 1 in Cassette mode) will help ensure high-quality printouts on the correct media. For more information on configuring the media type (and size for tray 1 in Cassette mode), see "Configuring Media Type and Size" later in this chapter.
- See the system administrator before making printer control panel changes. Any printer control panel changes could affect other print jobs.
- Coordinate setting the default printer font and downloading fonts with other users. Coordinating these operations conserves memory and reduces the chances of unexpected printer output.

Resetting the Printer

Use the procedures below to reset the printer to the factory defaults listed in the table following this section.

To reset the printer to factory defaults

1. Press **Menu** until INFORMATION MENU appears on the printer control panel display.
2. Press **Item** until PRINT CONFIG PAGE appears on the display.
3. Press **Select** to print the page.
4. Press **Menu** until RESETS MENU appears on the display.
5. Press **Item** until FACTORY DEFAULT RESET appears on the display.
6. Press **Select**. The printer will reset all factory defaults.

Note Resetting the printer to factory defaults clears all print jobs from the print buffer. After resetting the defaults, reprint any lost print jobs.

7. Reset the EIO type and configure the printer, if necessary.
8. Press **Go** to bring the printer online.
9. Use the printer configuration page to reconfigure the printer.

Factory Defaults

The following table lists factory defaults for printer settings.

Menu	Item	Factory Default
PAPER HANDLING MENU	TRAY 1 MODE =	FIRST
	TRAY 1 TYPE =[1]	PLAIN
	TRAY 1 SIZE =[1]	LETTER (8.5-by-11 inch)[2]
	TRAY 2 TYPE =	PLAIN
	TRAY 3 TYPE =	PLAIN
	TRAY 4 TYPE =[3]	PLAIN
	PAPER DEST =	TOP OUTPUT BIN
	DUPLEX =[4]	OFF
	BINDING[5]	LONG EDGE
	MANUAL FEED	OFF
	OVERRIDE A4 WITH LETTER	NO
	AUTO PAPER OVERRIDE	OFF

Menu	Item	Factory Default
CONFIGURATION MENU	POWERSAVE =	30 MIN
	PERSONALITY	AUTO
	CLEARABLE WARNINGS	ON
	TONER LOW	CONTINUE
	PRINT PS ERRORS	OFF
PRINTING MENU	COPIES =	1
	PAPER	LETTER[2]
	ORIENTATION	PORTRAIT
	FORM LENGTH	60 LINES
	PCL FONT SOURCE	INTERNAL
	PCL FONT NUMBER	0 (Courier)
	PCL PITCH	10.00
	PCL POINT SIZE	12.00
	PCL SYMBOL SET	PC-8
	COURIER	REGULAR
	WIDE A4	NO
	APPEND CR TO LF	NO
I/O MENU	I/O TIMEOUT	30 (seconds)
	PARALLEL ADV FUNCTIONS =	ON

1 Appears only if CASSETTE MODE is selected.
2 This setting will default to A4 in some countries/regions.
3 Appears only if the optional tray 4 is properly installed.
4 Appears only if the optional duplexer is installed.
5 Appears only if the optional duplexer is installed and DUPLEX is set to ON.

Printing Menu Maps

Print menu maps from the printer control panel, and then use the menu maps to view printer settings and to help navigate the printer control panel menus.

To print menu maps

1 Press **Menu** until INFORMATION MENU appears on the printer control panel display.
2 Press **Item** until PRINT MENU MAP appears on the display.
3 Press **Select** to print. The printer will automatically bring itself online.

Changing Settings in the Printer Control Panel

Use the printer control panel to configure the default printer selections and to obtain printer status information. Also, use the printer control panel to access printer features not supported by your application. For more information on navigating the printer control panel, see “Printing Menu Maps” on the previous page.

Configuring Menu Selections

Use the following instructions to configure all printer control panel settings, including the default printer settings.

To configure menu selections in the printer control panel

1. Press **Menu** until the menu you want appears on the printer control panel display.
2. Press **Item** until the item you want appears on the display.
3. Press **– Value +** until the value you want appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Repeat steps 1 through 4 until all of your changes are complete.
6. Press **Go** to bring the printer online.

Note

Changes to the printer control panel will not take effect until all current data in the print buffer prints or until the next print job.

Auto Continue

The Auto Continue feature allows the printer to continue printing when certain warnings or conditions occur (such as TONER LOW). The printer message will be displayed on the printer control panel, but the printer will continue printing. Auto Continue is always on, and most printer control panel messages that do not disable the printer will not stop subsequent jobs from printing. However, the job where the error occurred might not print correctly.

If in the Configuration Menu CLEARABLE WARNINGS is set to ON, many printer control panel messages can be cleared by pressing **Go**. If CLEARABLE WARNINGS is set to JOB, the clearable messages will be cleared from the display automatically when the job where the error occurred finishes printing.

Selecting the Mode for Tray 1

Tray 1 has two modes, First mode and Cassette mode. First mode is the default mode for tray 1. In First mode, tray 1 functions as a multipurpose tray. When tray 1 is in First mode, the printer will look first for media loaded in tray 1. If there is media loaded in tray 1, the printer will print from tray 1 regardless of media type and size, or media source information sent with the print job.

In Cassette mode, tray 1 functions as a regular input tray. When tray 1 is in Cassette mode, you load media in the input tray and configure the media type and size on the printer control panel.

Note

When using First mode, specify the media type and size in the printer driver. If the printer senses that the media in tray 1 is a different size from what you specified in the printer driver, then the printer either will not feed the media or will only feed one page of the media and then stop printing to prevent damage to the printer.

To select the mode for tray 1

1. Press **Menu** until PAPER HANDLING MENU appears on the printer control panel display.
2. Press **Item** until TRAY 1 MODE = appears on the display.
3. Press **– Value +** until the correct mode appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Configuring Media Type and Size

Configure the media type (such as plain paper, letterhead, or transparencies) for each of the input trays. Also configure the media size (such as letter, A4, or legal) if the printer is configured for Cassette mode in tray 1. If the media type and size have been correctly configured for the input trays, the printer will print based on the type and size of media and will automatically use the correct input tray. Configuring the media type is beneficial for several reasons:

- Setting the media type prevents printing on the wrong, possibly expensive, media.
- The printer will automatically adjust its print speed to accommodate special media (such as card stock, labels, and transparencies). These adjustments will give the best quality output, saving time and resources.

Note If the media type is not set properly, the printer might not print on the correct media or at the correct speed for the media type, which can result in poor print quality.

To configure the input trays

1. Press **Menu** until PAPER HANDLING MENU appears on the printer control panel display.
2. Press **Item** until TRAY [number] TYPE = appears on the display.
3. Press **– Value +** until the correct media type appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Trays 2, 3, and the optional tray 4 will automatically sense the media size. To configure the media size for tray 1 in Cassette mode, continue with step 5. Otherwise, proceed to step 8.

5. To configure tray 1 in Cassette mode, press **Item** until TRAY 1 SIZE= appears on the display.
6. Press **– Value +** until the correct media size appears on the display.
7. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8. Repeat steps 2 through 4 to configure the media type in another input tray.
   - Or -
   Press **Go** to bring the printer online.

For more information on First and Cassette modes, see “Selecting the Mode for Tray 1” later in this chapter.

Selecting an Output Bin

Select the top output bin (face down) or the left output bin (face up) in the printer control panel. The top output bin stacks the pages in sequential order, so that the first page is on top and the last page is on bottom. The left output bin provides a straight paper path which is useful to prevent curling when printing on card stock, labels, or other special media.

If you have an optional multi-bin mailbox, the system administrator must select the mode for the multi-bin mailbox through the HP JetAdmin software or with a PJL (printer job language) command. Three modes are available:

- mailbox—a mailbox name or user name can be assigned to each mailbox bin
- job separator—each print job is delivered to a separate mailbox bin, beginning with the lowest bin
- stacker—print jobs are delivered to mailbox bins, beginning with the lowest bin, until bins are full

Select the default destination for print jobs in the printer control panel. The printer will send print jobs to the default destination if a destination is not selected in the printer driver, or if your printing environment does not use printer drivers. For more information on using the HP JetAdmin software, see the online help. For more information on using PJL commands to set the multi-bin mailbox mode, see appendix C, “PJL Commands.”

Note Changes made to the multi-bin mailbox mode settings in the printer driver will **not** override the multi-bin mailbox mode set in the HP JetAdmin software or through PJL commands.

To select an output bin

1. Press **Menu** until PAPER HANDLING MENU appears on the printer control panel display.
2. Press **Item** until PAPER DEST = appears on the display.
3. Press **– Value +** until the correct destination appears on the display.
4. Press **Select** to save the selection. An asterisk (∗) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Setting Media Type and Size Overrides

Set the media override option to select the media on which a job will print if the selected media is not available.

To set the media override

1. Press **Menu** until PAPER HANDLING MENU appears on the printer control panel display.
2. Press **Item** until AUTO PAPER OVERRIDE appears on the display.
3. Press **– Value +** until the ON or OFF appears on the display.
   - ON—If the requested media is not found, TRAY X LOAD <Type> <Size> will appear on the display. There will be a delay before the printer automatically prints on plain paper on the default media size (set in the PRINTING MENU on the printer control panel). The delay time can be configured through the HP JetAdmin software. For more information on configuring HP JetAdmin software, see the associated online help file.
   - OFF—TRAY X LOAD <Type> <Size> will appear on the display. The printer will not print until it detects the correct media type and size or **Go** is pressed.

Note If the requested media size is larger than the default paper size (for example, 11-by-17 inch size is requested, but the default is letter size), then the image will be cropped to fit on the smaller page size.

4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Selecting the A4 Override

Enabling OVERRIDE A4 WITH LETTER will print A4-sized documents on letter-sided media, **or** letter-sized documents on A4-sized media. However if an input tray is configured for the size you want to override (letter or A4), then the printer will print on the correct size of media regardless of the override setting.

To select the A4 override

1 Press **Menu** until PAPER HANDLING MENU appears on the printer control panel display.
2 Press **Item** until OVERRIDE A4 WITH LETTER appears on the display.
3 Press **– Value +** to display ON or OFF.
4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5 Press **Go** to bring the printer online.

Controlling a Proof and Print Job

The proof and print feature prints one copy of a job for proofreading, and then allows quick and easy printing of any remaining copies from the printer control panel. For more information on using the proof and print feature, see the online help for the printer driver.

Note A printer hard disk is required to use the proof and print feature.

To continue a proof and print job

1 Press **Menu** until PROOF AND PRINT MENU appears on the printer control panel display.
2 Press **Item** until the job owner and job name appears on the display.
3 Press **– Value +** to change the number of copies to be printed. If you do not want to change the number of copies to be printed, go to step 4.
4 Press **Select** to print the remaining copies of the print job.
5 Press **Go** to bring the printer online.

To delete a proof and print job

1 Press **Menu** until PROOF AND PRINT MENU appears on the printer control panel display.
2 Press **Item** until the job owner and job name appears on the display.
3 Press **– Value +** to change the number of copies to 0 (zero), then press **Select** to delete the remaining copies.
- Or -
Press **Cancel Job**.
4 Press **Go** to bring the printer online.

Selecting Toner Low Response

Selecting the toner low response allows you to determine how the printer will behave when the printer detects a toner level is low.

Note The printer uses the toner low response setting as the setting for TRANSFER KIT OUT REPLACE KIT, FUSER LIFE OUT REPLACE KIT, and DRUM LIFE LOW REPLACE DRUM KIT messages. For example, if the toner low response is set to CONTINUE, then when the TRANSFER KIT OUT REPLACE KIT message appears on the printer control panel and the user presses **Go** the printer will continue printing.

To select the toner low response

1 Press **Menu** until CONFIGURATION MENU appears on the printer control panel display.
2 Press **Item** until TONER LOW appears on the display.
3 Press **– Value +** until the option you want appears on the display. The available options include the following:
- STOP will take the printer offline. Pressing **Go** will bring the printer online and allow printing to continue until the toner cartridge is empty. When the toner cartridge is empty, the message TONER OUT REPLACE <Color> will be displayed.
- CONTINUE will display the TONER LOW REPLACE <Color> warning until the toner cartridge is empty.

4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5 Press **Go** to bring the printer online.

Note Although this option allows you to configure the printer behavior when the consumable lives are low, print quality will eventually degrade after a consumable's life has reached low, regardless of how you have configured the printer response. These print quality problems can be fixed by replacing the consumable.

Setting the Power Save Mode

The Power Save mode conserves electricity by reducing the amount of power the printer uses when it has been idle for a length of time specified in the printer control panel. The default setting is 30 minutes (30 MIN). However, the Power Save mode can be adjusted to start between 10 seconds and 120 minutes after the last print job finishes. The printer fans will run for 30 minutes after entering Power Save mode to cool the printer.

Note The 10 seconds setting is for use by service personnel and is not recommended for daily use.

To set the Power Save mode

1. Press **Menu** until CONFIGURATION MENU appears on the printer control panel display.
2. Press **Item** until POWERSAVE appears on the display.
3. Press **– Value +** until the interval you want (between 30 minutes and 120 minutes) appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Selecting Parallel Advanced Function

If the printer is not correctly interpreting data transmitted across the ECP (enhanced capability parallel) port, turn the parallel advanced functions off to send the printer into compatibility mode. Compatibility mode turns the bidirectional communication off so that an HP LaserJet fax or other peripheral between the host computer and the printer will work correctly.

Note

You must have the parallel advanced functions turned off for a peripheral connected between the host computer and the printer to work correctly.

To select the parallel advanced function

1. Press **Menu** until I/O MENU appears on the printer control panel display.
2. Press **Item** until PARALLEL ADV FUNCTIONS = appears on the display.
3. Press **– Value +** to display ON or OFF.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Selecting the Default Printer Personality

Select the default printer personality for multi-platform environments, or select a personality if your printer driver does not send the PJL header with the print job. AUTO is the default setting.

Note To decrease the amount of time the printer spends switching between personalities, set the default to the personality your network uses most of the time.

To select the printer personality

1. Press **Menu** until CONFIGURATION MENU appears on the printer control panel display.
2. Press **Item** until PERSONALITY appears on the display.
3. Press **– Value +** until the option you want appears on the display. The available options include the following:
   - AUTO enables switching by file type or PJL description. This is the default setting and the best setting to maintain all printer capabilities.
   - PCL selects printer control language (PCL) as the printer personality.
   - POSTSCRIPT selects the PostScript language as the printer personality.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Setting the I/O Timeout

The I/O timeout sets the amount of time the printer waits after receiving print data before switching I/O ports. The default time is 30 seconds.

To set the I/O timeout

1. Press **Menu** until I/O MENU appears on the printer control panel display.
2. Press **Item** until I/O TIMEOUT appears on the display.
3. Press **– Value +** until the interval you want (between 5 and 300 seconds) appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
5. Press **Go** to bring the printer online.

Note If the I/O timeout is too short, print jobs might be incomplete. If the I/O timeout is too long, print jobs might be unnecessarily delayed.

Locking the Printer Control Panel

You can prevent users from changing the printer control panel settings by establishing a password, thus enabling the printer control panel lock. When locked, unauthorized users who try to change settings in the printer control panel will receive an ACCESS DENIED message.

If you are using Microsoft Windows, use either the HP JetAdmin software or an ASCII escape sequence. The easier of the two methods is through the HP JetAdmin software, which is on the CD-ROM that came with the printer. From the HP JetAdmin software, select the **Printer** tab, and then select **Lock Control Panel**. For more information on using the HP JetAdmin software to perform this function, see the HP JetAdmin online help.

If you choose not to use the HP JetAdmin software, follow the procedures in appendix C, “PJL Commands,” to control printer security with the ASCII escape sequence.

If you are using Mac OS, use the HP LaserJet utility. From the HP LaserJet utility, on the Security tab select **Lock Control Panel**.

Note

If you have forgotten the password for the printer control panel, print a configuration page then reset the printer with a cold reset (hold down **Go** while turning the printer off and on). **All** printer settings (including internal print server card settings) will return to the factory defaults, all passwords will be cleared, and the printer control panel will be unlocked. Use the configuration page to restore the printer settings. For more information on printing a configuration page, see “Printing Internal Pages” later in this chapter.

Selecting the Display Language

Using the printer control panel, you can set the printer to display printer messages and print test pages in a variety of supported languages.

To select the display language

1 Hold down **Select** while turning the printer off and then on. CONFIG LANGUAGE (in English) appears on the printer control panel display for approximately one second. Once the printer has restarted, LANGUAGE=ENGLISH will appear.

Note

Only **– Value +**, **Select**, and **Go** are active while the display language is being configured. All other keys are ignored.

If you press **Go** without selecting a language, the printer will bring itself online and all subsequent messages will be displayed in English. However, since no display language was selected, the LANGUAGE = ENGLISH message will reappear (after the power-on self test) when the printer is next turned on. This message will be displayed every time the printer is turned on until you select a language through the configure language mode.

2 Press **– Value +** until the language you want appears on the display.

3 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection. The language selected will be the default language until another selection is made by restarting the printer in the configure language mode.

4 Press **Go** to bring the printer online.

Printing Internal Pages

Print a configuration page to verify that the printer is set up correctly or to verify information about the printer's configuration.

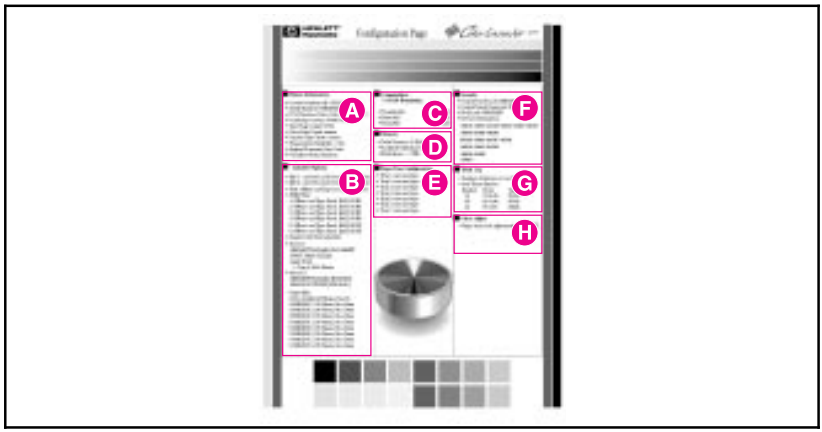
To print a configuration page

1. Press **Menu** until INFORMATION MENU appears on the printer control panel display.
2. Press **Item** until the option you want appears on the display. The available options include the following:
   - PRINT MENU MAP
   - PRINT CONFIG PAGE
   - PRINT PCL FONT LIST
   - PRINT PS FONT LIST
   - PRINT LASERJET DEMONSTRATION
   - PRINT FILE DIRECTORY PAGE
   - PRINT CONTINUOUS CONFIG PAGES
   - PRINT EVENT LOG
3. Press **Select** to print the page. The printer will automatically bring itself online.
4. If you want to print another page, repeat steps 1 though 3.

Interpreting the Configuration Page

The following figure is a example of a configuration page.

Figure 5



A **Printer Information**—Lists the printer product number, serial number, PCL firmware date code, PostScript version, total pages printed during the life of the printer, number of color pages printed during the life of the printer, number of black-and-white pages printed during the life of the printer, and number of duplex pages printed during the life of the printer.

B **Installed Options**—Shows whether options have been installed, such as the printer hard disk, DIMMs, duplexer, multi-bin mailbox, and optional input trays.

C **Consumables: % of Life Remaining**—Shows the percentage of the maximum rated life remaining for some consumable kits in the printer.

D **Memory**—Shows the total memory installed in the printer (including a printer hard disk) and the settings that affect how the memory is used.

E **Paper Tray Configuration**—Lists the types and sizes of media configured for each input tray.

F **Security**—Shows whether the security features have been activated, such as the printer control panel lock, printer control panel password, and printer hard disk lock. There also is a service information code for service personnel.

G **Event Log**—Lists the last five printer events, including printer jams, service errors, and other printer actions.

H **Color Adjust**—Lists the number of pages since the last color adjustment.

Note Print the Menu Map from the printer control panel to view the current color adjustment values.

Managing Memory

The printer supports an optional printer hard disk as well as ROM (read-only memory) and synchronous DRAM (dynamic random-access memory) DIMMs (dual inline memory modules). DRAM DIMMs must be installed in synchronized pairs (two DIMMs) with the same amount of memory installed in facing left and right slots. For more information on DIMMs, see appendix A, “DIMM Installation.”

The printer comes with 24 MB of RAM and can be expanded with additional DIMMs. The printer has four available DIMM slots for additional 4, 8, or 16 MB DIMMs.

An optional printer hard disk is available for storing downloaded fonts and forms in the printer. Unlike standard printer memory, information stored on the printer hard disk is permanently downloaded and will remain in the printer even when the printer is turned off. A printer hard disk also enables proof and print and mopying features (which can significantly decrease the processing time for multiple copies, or large or complex jobs). For information on ordering a printer hard disk, see “Accessories, Options, and Related Products” in chapter 9.

Note A printer hard disk is required to mopy or proof and print.

Downloading Fonts

Mac OS users can download fonts to the printer RAM or printer hard disk through the HP LaserJet utility, and Windows users can download fonts to the printer RAM or printer hard disk through the PCL printer driver or third party applications. For the Mac OS environment, see the HP LaserJet utility online help included with the HP LaserJet utility software. For the Windows environment, see the printer driver online help.

Resource Saving

Resource Saving allows PCL and PostScript fonts and macros downloaded to the printer’s RAM when the printer switches between PCL and PostScript personalities. The printer determines the amount of RAM allocated to save each of the printer personality environments. Resource Saving is always enabled.

Note All data downloaded to the printer’s RAM will be lost when the printer is turned off.

Configuring the Printer for a Network

For printers with the optional HP JetDirect internal print server, certain network parameters might need to be set depending upon the network configuration. If you choose not to use the HP JetAdmin software to configure these parameters, use one of the following procedures to set the network parameters from the printer control panel.

For more information on configuring network parameters using the HP JetAdmin software, see the *HP JetDirect Print Server Software Installation Guide*.

Note EIO slot 1 is the bottom slot; EIO slot 2 is the top slot.

Configuring Novell NetWare Parameters

The HP JetDirect internal print server automatically selects a Novell NetWare frame type; however, if this selection is incorrect, reset it from the printer control panel. The Novell NetWare frame type is displayed on the configuration page.

To configure the Novell NetWare parameters

1 Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2 Press **Item** until CFG NETWORK = appears on the display.
3 Press **– Value +** until YES appears on the display.
4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish configuring the Novell NetWare parameters.

5 Press **Item** until CFG NOVELL = appears on the display.
6 Press **– Value +** until YES appears on the display.
7 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8 Press **Item** until FRAME = appears on the display.
9 Press **– Value +** until the Novell NetWare protocol frame type option you want appears on the display. The available options include the following:

- AUTO (default) sets the first detected frame type.

- EN_8023 limits frame types to IPX over IEEE 802.3 frames. All others will be counted and discarded.
- EN_II limits frame types to IPX over Ethernet II frames. All others will be counted and discarded.
- EN_8022 limits frame types to IPX over IEEE 802.2 with Ethernet frames. All others will be counted and discarded.
- EN_SNAP limits frame types to IPX over SNAP with Ethernet frames. All others will be counted and discarded.

10 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

11 Press **Go** to bring the printer online.

Configuring TCP/IP

If you choose not to use the HP JetAdmin software to configure TCP/IP parameters, or if you are using a UNIX® system other than HP-UX, Solaris, or SunOS, use the printer control panel to configure the following TCP/IP parameters manually:

- Enable/disable BOOTP for configuration parameters (the default is to use BOOTP)
- IP address (4 bytes)
- Subnet mask (4 bytes)
- Syslog server IP address (4 bytes)
- Default gateway (4 bytes)
- TCP connection timeout (in seconds) connection timeout, configuring TCP

Note Do not disable the BOOTP parameter if you will be using RARP or DHCP.

To configure TCP/IP parameters

1 Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.

2 Press **Item** until CFG NETWORK = appears on the display.

3 Press **– Value +** until YES appears on the display.

4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish configuring the TCP/IP parameters.

5 Press **Item** until CFG TCP/IP = appears on the display.

6 Press **– Value +** until YES appears on the display.

7 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

8 Press **Item** until BOOTP = appears on the display.

9 Press **– Value +** until YES or NO appears on the display.

10 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

- If you select YES, then the values for the TCP/IP parameters will be provided by the BOOTP file, RARP, or DHCP and no other TCP/IP configuration is necessary. Go to step 16.
- If you select NO, then you will be prompted to configure each of the TCP/IP parameters. Go to step 11 to complete the configuration.

11 Press **Item** until IP BYTE 1 = appears on the display.

12 Press **– Value +** until the value of the first byte of the IP address appears on the display.

13 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

14 Press **Item** to continue. Repeat steps 12 and 13 to configure the remaining bytes of the IP address.

15 Repeat steps 11 through 15 to configure the subnet mask bytes (SM =), syslog server IP address (LG =), default gateway (GW =), and timeout (TIMEOUT =).

16 Press **Go** to bring the printer online.

Configuring Apple EtherTalk Phase Parameter

Configure the printer by assigning EtherTalk zones so the printer can be accessed through the Chooser.

To configure EtherTalk phase parameters

1 Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2 Press **Item** until CFG NETWORK = appears on the display.
3 Press **– Value +** until YES appears on the display.
4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish configuring the EtherTalk parameters.

5 Press **Item** until CFG ETALK = appears on the display.
6 Press **– Value +** until YES appears on the display.
7 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8 Press **Item** until PHASE = appears on the display.
9 Press **– Value +** until the phase parameter you want appears on the display.

Note EtherTalk phase 2 is used by most multizone networks.

10 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
11 Press **Go** to bring the printer online.

Disabling Network Protocols

By factory default, all supported network protocols are enabled in the printer. Disabling unused protocols will enhance printer performance because it will:

- Decrease printer-generated network traffic.
- Prevent unauthorized users from printing to the printer.
- Provide only pertinent information on the configuration page.
- Allow the display of warning messages on the printer control panel display to show protocol-specific error conditions.

To disable IPX/SPX

Note Do not disable this protocol if peer-to-peer network clients, such as Windows 95 or Windows NT clients, use the printer.

1. Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2. Press **Item** until CFG NETWORK = appears on the display.
3. Press **– Value +** until YES appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish disabling the IPX/SPX protocol.

5. Press **Item** until NOVELL = appears on the display.
6. Press **– Value +** until OFF appears on the display.
7. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8. Press **Go** to bring the printer online.

To disable DLC/LLC

1 Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2 Press **Item** until CFG NETWORK = appears on the display.
3 Press **– Value +** until YES appears on the display.
4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish disabling the DLC/LLC protocol.

5 Press **Item** until DLC/LLC = appears on the display.
6 Press **– Value +** until OFF appears on the display.
7 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8 Press **Go** to bring the printer online.

To disable TCP/IP

1 Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2 Press **Item** until CFG NETWORK = appears on the display.
3 Press **– Value +** until YES appears on the display.
4 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish disabling the TCP/IP protocol.

5 Press **Item** until TCP/IP = appears on the display.
6 Press **– Value +** until OFF appears on the display.
7 Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8 Press **Go** to bring the printer online.

To disable Apple EtherTalk

1. Press **Menu** until HP EIO <number> MENU appears on the printer control panel display. <Number> identifies the EIO slot number.
2. Press **Item** until CFG NETWORK = appears on the display.
3. Press **– Value +** until YES appears on the display.
4. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.

Note Selecting CFG NETWORK = YES tells the printer that you want to configure the network. The printer control panel changes back to CFG NETWORK = NO after you finish disabling the EtherTalk protocol.

5. Press **Item** until ETALK = appears on the display.
6. Press **– Value +** until OFF appears on the display.
7. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
8. Press **Go** to bring the printer online.

Chapter 3

Common Printing Tasks

Selecting Media

Many types of paper and other print media can be used with the printer, within certain specifications. Using media that does not meet the specifications outlined in this chapter can increase the incidence of media jams, contribute to repair and maintenance costs, and cause premature wear, print quality problems, and problems requiring service. This service might not be covered by the HP warranty or service agreements.

Before purchasing media or specialized forms, test a small quantity in the printer. Make sure your media supplier obtains and understands the media and print media specifications in the *HP LaserJet Printer Family Paper Specifications Guide*. (For ordering information, see "Accessories, Options, and Related Products" in chapter 9.)

Note It is possible that media could meet all of the specifications in this chapter and still not print satisfactorily. This might be caused by abnormal characteristics of the printing environment or other variables over which HP has no control, such as extremes in temperature and humidity.

- Use only print media that meet the specifications outlined in this chapter.
- Do not attempt to print unsupported sizes or weights of media or other unsupported media. For more information on supported media, see "Supported Media Weights and Sizes for Input Trays" on the next page.
- Always handle transparencies and glossy media by their edges to avoid fingerprints in the image area.
- Do not use media that has already passed through the printer or through a copy machine, even if there is no printing on the page.
- Recycled media can be used with this printer. Recycled media must meet the specifications shown in this chapter.

Supported Media Weights and Sizes for Input Trays

The following table lists the types and sizes of media supported by each input tray. For best results, use HP LaserJet paper or conventional white xerographic paper. The media should be good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, perforations, and curled or bent edges. For a complete list of media specifications, see the *HP LaserJet Printer Family Paper Specifications Guide*.

For more information on orienting the media in each of the input trays, see the appropriate section later in this chapter.

Tray Location	Media Type	Media Size (Common Name and Dimensions)	Media Weight	Maximum Capacity
Tray 1	Paper Plain Preprinted Letterhead Prepunched Bond Recycled Color Card Stock Heavy (greater than 28 lb/105 g/m² bond) Glossy	Executive (7.25 by 10.50 in, 184.15 by 266.70 mm) Letter (8.50 by 11 in, 215.90 by 279.40 mm) Legal (8.50 by 14 in, 215.90 by 355.60 mm) 11 by 17 in (279.40 by 431.80 mm) A5 (148 by 210 mm, 5.83 by 8.27 in) ISO B5 (176 by 250 mm, 6.93 by 9.85 in) JIS B5 (182 by 257 mm, 7.17 by 10.13 in) A4 (210 by 297 mm, 8.27 by 11.70 in) JIS B4 (257 by 364 mm, 10.13 by 14.34 in) A3 (297 by 420 mm, 17.70 by 16.55 in) 12 by 18.50 in (304.80 by 469.90 mm) 312 by 440 mm (12.29 by 17.33 in) Custom minimum 99 by 190 mm (3.90 by 7.49 in), maximum 304 by 469 mm 11.98 by 18.48 in)	16 to 58 lb (60 to 216 g/m²) bond	100 sheets of 20 lb (75 g/m²) bond Limit to media-fill mark on the media width guides
	Envelopes	Monarch (3.90 by 7.50 in, 99.06 by 90.50 mm) Commercial #10 (Com10) (4.10 by 9.50 in, 104.14 by 241.30 mm) DL (110 by 220 mm, 4.33 by 8.67 in) Double Post Card (JPOSTD) (148 by 200 mm, 5.83 by 7.88 in) C5 (162 by 229 mm, 6.38 by 9.02 in) B5 (176 by 250 mm, 6.93 by 9.85 in)	Maximum 24 lb (90 g/m²) bond	Approximately 10 Limit to media-fill mark on the media width guides
	Labels	Letter (8.50 by 11 in, 215.90 by 279.40 mm) A4 (210 by 297 mm, 8.27 by 11.70 in)	—	Limit to media-fill mark on the media width guides
	Transparency	Letter (8.50 by 11 in, 215.90 by 279.40 mm) A4 (210 by 297 mm, 8.27 by 11.70 in)	4 to 5 mils (0.10 to 0.13 mm) thick*	Limit to media-fill mark on the media width guides

Tray Location	Media Type	Media Size (Common Name and Dimensions)	Media Weight	Maximum Capacity
Trays 2 and 3	Paper Plain Preprinted Letterhead Prepunched Bond Recycled Color Glossy	Executive (7.25 by 10.50 in, 184.15 by 266.70 mm) Letter (8.50 by 11 in, 215.90 by 279.40 mm) Legal (8.50 by 14 in, 215.90 by 355.60 mm) A4 (210 by 297 mm, 8.27 by 11.70 in) **Tray 3 only** 11 by 17 in (279.40 by 431.80 mm) A3 (297 by 420 mm, 17.70 by 16.55 in)	16 to 28 lb (60 to 105 g/m²) bond	500 sheets of 20 lb (75 g/m²) bond Limit to media-fill mark on the media width guides
	Transparency	Letter (8.50 by 11 in, 215.90 by 279.40 mm) A4 (210 by 297 mm, 8.27 by 11.70 in)	4 to 5 mils (0.10 to 0.13 mm) thick*	Limit to media-fill mark on the media width guides
Tray 4 (optional)	Paper Plain Preprinted Letterhead Prepunched Bond Recycled Color Glossy	Letter (8.50 by 11 in, 215.90 by 279.40 mm) Legal (8.50 by 14 in, 215.90 by 355.60 mm) 11 by 17 in (279.40 by 431.80 mm) A4 (210 by 297 mm, 8.27 by 11.70 in) JIS B4 (257 by 364 mm, 10.13 by 14.34 in) A3 (297 by 420 mm, 17.70 by 16.55 in)	16 to 28 lb (60 to 105 g/m²) bond	2,000 sheets of 20 lb (75 g/m²) bond Limit to media-fill mark on the media width guides
* HP recommends using 5 mil (0.13 mm) thick transparencies with this printer.				

Supported Media Weights and Sizes for the Optional Multi-bin Mailbox

The following table lists the types and sizes of media supported by multi-bin mailbox output bins.

Bin	Media Type	Media Size (Common Name and Dimensions)	Media Weight	Maximum Capacity
Mailboxes	Paper Plain Preprinted Letterhead Prepunched Bond Recycled Color	Letter (8.50 by 11 in, 215.90 by 279.40 mm) Legal (8.50 by 14 in, 215.90 by 355.60 mm) 11 by 17 inch (279.40 by 431.80 mm) A4 (210 by 297 mm, 8.27 by 11.70 in) A3 (297 by 420 mm, 17.70 by 16.55 in) JIS B4 (257 by 364 mm, 10.13 by 14.34 in)	16 to 28 lb (60 to 105 g/m²) bond	250 sheets of 20 lb (75 g/m²) bond
Left (face-up) Output Bin	Paper Plain Preprinted Letterhead Prepunched Bond Recycled Color Card Stock Heavy (greater than 28 lb/105 g/m² bond) Glossy	Letter (8.50 by 11 in, 215.90 by 279.40 mm) Legal (8.50 by 14 in, 215.90 by 355.60 mm) 11 by 17 in (279.40 by 431.80 mm) Executive (7.25 by 10.50 in, 184.15 by 266.70 mm) A4 (210 by 297 mm, 8.27 by 11.70 in) A5 (148 by 210 mm, 5.83 by 8.27 in) A3 (297 by 420 mm, 17.70 by 16.55 in) JIS B5 (182 by 257 mm, 7.17 by 10.13 in) JIS B4 (257 by 364 mm, 10.13 by 14.34 in) ISO B5 (176 by 250 mm, 6.93 by 9.85 in) 12 by 18.50 in (304.80 by 469.90 mm) 312 by 440 mm (12.29 by 17.33 in) Custom minimum 99 by 190 mm (3.90 by 7.49 in), maximum 304 by 469 mm 11.98 by 18.48 in)	16 to 58 lb (60 to 216 g/m²) bond	125 sheets of 20 lb (75 g/m²) bond
	Labels	Letter (8.50 by 11 in, 215.90 by 279.40 mm) A4 (210 by 297 mm, 8.27 by 11.70 in)	—	
	Transparency	Letter (8.50 by 11 in, 215.90 by 279.40 mm) A4 (210 by 297 mm, 8.27 by 11.70 in)	4 to 5 mils (0.10 to 0.13 mm) thick*	
	Envelopes	Commercial #10 (Com10) (4.10 by 9.50 in, 104.14 by 241.30 mm) Monarch (3.90 by 7.50 in, 99.06 by 190.50 mm) C5 (162 by 229 mm, 6.38 by 9.02 in) DL (110 by 220 mm, 4.33 by 8.67 in) B5 (176 by 250 mm, 6.93 by 9.85 in) Double Post Card (JPOSTD) (148 by 200 mm, 5.83 by 7.88 in)	Maximum 24 lb (90 g/m²) bond	30 Monarch-sized envelopes

* HP recommends using 5 mil (0.13 mm) thick transparencies with this printer.

Preprinted Forms and Letterhead

Observe the following guidelines to avoid problems with preprinted forms and letterhead.

- Forms and letterhead must have been printed with heat-resistant inks that will not melt, vaporize, or release hazardous emissions when subjected to the printer's fusing temperatures (approximately 374° F, or 190° C).
- The inks must be non-flammable and must not adversely affect any printer rollers.
- Forms and letterhead should be sealed in a moisture-proof wrapping to prevent moisture damage during storage.
- Inks must be completely dry on forms and letterhead before they are used in the printer. Ink that is not completely dry can come off the page during the fusing process.

Recycled Media

Choose recycled media that meets the same specifications as standard paper (see "Supported Media Weights and Sizes for Input Trays" earlier in this chapter). HP recommends that recycled media contain no more than five percent ground wood.

Envelopes

Envelopes can only be printed from tray 1. The weight of the envelope paper should not exceed 24 lb (90 g/m^2) bond; otherwise, jamming might occur. For more information on printing envelopes, see "Printing Envelopes from Tray 1" later in this chapter.

- Envelopes should lie flat, with less than 0.25 inches (6.35 mm) curl.
- Output envelopes to the left (face-up) output bin rather than to the top (face-down) output bin to reduce curl.
- The optional multi-bin mailbox does not support envelopes except in its left (face-up) output bin.
- Do not use envelopes with windows or clasps.
- Make sure envelopes are not wrinkled, nicked, or otherwise damaged.
- Envelopes with a peel-off adhesive strip or with more than one flap must use adhesives compatible with the printer's fusing temperatures (approximately 374° F, or 190° C). Extra flaps or strips can result in wrinkling or creasing, and can cause jamming.

Transparencies

Caution Use only transparencies supported for use in this printer, such as HP Color LaserJet transparencies (for ordering information, see "Accessories, Options, and Related Products" in chapter 9). Using transparencies that do not meet the specifications for this printer can cause poor print quality and media jams.

Although this printer supports transparencies between 4 and 5 mils (0.10 to 0.13 mm) thick, HP recommends using 5-mil (0.13-mm) thick transparencies.

To prevent damage to the printer, transparencies must be able to withstand the printer's fusing temperature (approximately 374° F, or 190° C).

Handle transparencies by the edges. Oils from your fingers can be deposited on the transparencies, causing print quality problems.

Heavy Paper Stock

Heavy paper stock is any paper heavier than 28 lb up to 58 lb (105 to 216 g/m²) bond. Always print heavy paper stock from tray 1. In the printer driver, select **Heavy Paper** as the paper type on the Paper tab to ensure the correct finish on the media. Also, use the left (face-up) output bin to prevent media jams. For more information on changing the printer driver settings, see the online help.

Do not use extremely heavy paper stock (greater than 58 lb, or 216 g/m² bond). Misfeeds, mis-stacking, media jams, poor toner fusing, poor print quality, and excessive mechanical wear can result.

Labels

Labels consist of three parts: the top or face sheet that the printer prints on, the adhesive, and the carrier sheet (also referred to as the backing or liner). When printing on labels with this printer, observe the following:

- Top sheets, which are the printing surface, are usually composed of xerographic paper. Label top sheets must provide good toner adhesion.
- Carrier sheets must be compatible with the printer's fusing temperature (approximately 374° F, or 190° C) and the pressure of the fusing process. The carrier sheet also must be coated for easy release of the top sheet.

Caution Do not remove labels from the carrier sheet and then print on the remaining labels; printer damage can result.

- Adhesives must be able to withstand the printer's fusing temperature (approximately 374° F, or 190° C). The adhesives must not produce emissions that exceed exposure levels or threshold limits established by the U.S. Occupational Safety and Health Administration and other safety agencies. Adhesives must not come in direct contact with any part of the printer. No adhesive should be pressed out of the edges or between die-cuts (the cuts between individual labels).
- Labels should be arranged so that the carrier sheet is not exposed. Using label stock with spaces between the horizontal rows of labels might result in labels peeling off during printing, causing jams and possible printer damage. Labels might be specifically manufactured to leave a margin around the outside edges that correspond to the outer margins of the printable area. *Do not remove* the excess top sheet material from the carrier sheet.

Note Labels could meet all of the guidelines in this chapter and still not print satisfactorily because of the printing environment or other variables over which HP has no control.

Colored Media

Colored media should be of the same high quality as white xerographic paper. Pigments used must be able to withstand the printer's fusing temperature (approximately 374° F, or 190° C). Do not use media with colored coating that was added after the media was produced.

The printer cannot detect the color of media you are using. Varying the shade or color of the media can change the shades of the printed colors.

Media to Avoid

Follow these guidelines to avoid poor print quality or damage to the printer:

- Do not use media that contains embossing.
- Do not use media with cutouts or perforations.
- Do not use multi-part forms.
- Do not use media with irregularities, such as tabs or staples.
- Do not use preprinted media that contains thermography or inks that melt, vaporize, or release hazardous emissions when subjected to the fusing temperature (approximately 374° F, or 190° C).
- Do not use any media that produces hazardous emissions, melts, offsets, or discolors when heated to the printer's fusing temperatures (approximately 374° F, or 190° C).
- Do not use media that has already been through a photocopier or printer, even if there is no printing on the page.
- Do not use media with a watermark if solid fill areas are to be printed.
- Do not use transparencies designed for ink jet printers.

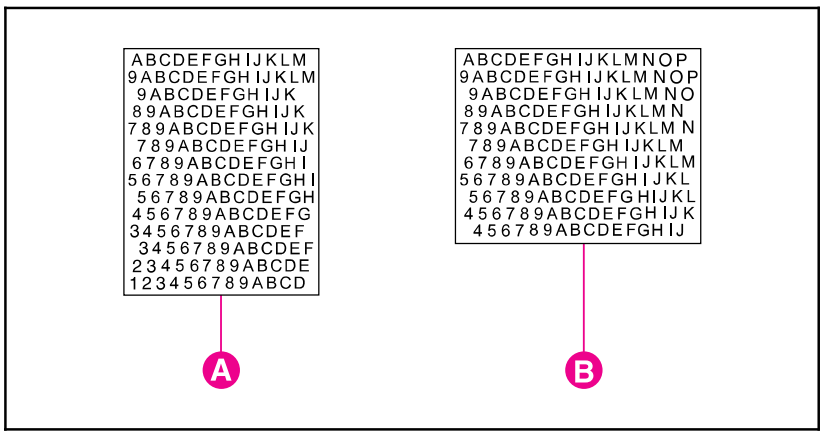
Controlling Your Print Job

Control your print jobs from the printer or your computer. Changes to the printer setup made from the printer control panel become default settings for all print jobs. Changes to the printer setup made through the printer driver on the computer will override settings in the printer control panel and affect only the print jobs initiated from that computer. Changes made from an application will remain in effect for the current print job or until changed, depending on the application. Most changes made to the printer should be made from the computer so that the changes do not affect other users' print jobs.

Changing Page Orientation

The following figure shows different page orientations:

Figure 6



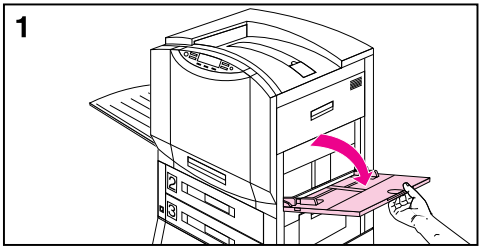
A Portrait
B Landscape

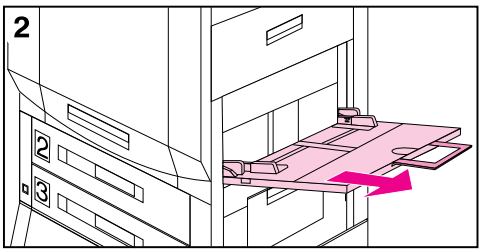
Control the page orientation from your application, the printer driver, or the printer control panel (PCL print jobs only):

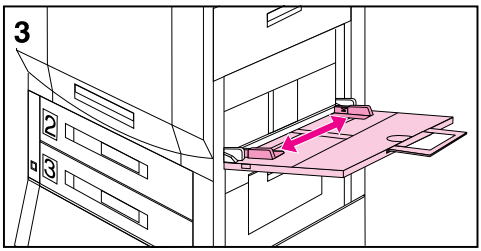
- To print across the width (short edge) of the media, select portrait page orientation from your application or the printer driver.
- To print across the length (long edge) of the media, select landscape page orientation from your application or the printer driver.

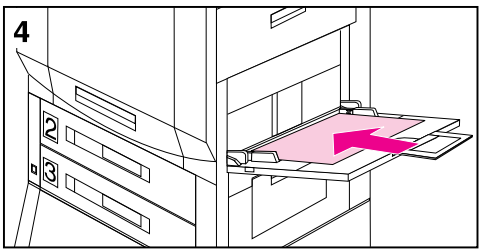
For more information on changing the page orientation, see the online help for your application or the printer driver.

Printing from Tray 1









Load up to 100 sheets of 20 lb (75 g/m²) bond paper in tray 1. Use either First mode or Cassette mode when printing from tray 1. For more information on the modes for tray 1, see chapter 2, “Using the Printer Control Panel.”

Caution

To avoid media jams, never add or remove media from tray 1 while the printer is printing from tray 1.

To load media into tray 1

1. Open tray 1.
2. Pull out the tray extension if the media is longer than the input tray.
3. Slide the media width guides to the size that matches the media.
4. Load up to 100 sheets of 20 lb (75 g/m²) bond paper into the input tray face up, with the long edge of the letter- or A4-sized media toward the printer. For more information on loading other sizes into tray 1, see “Orienting Media in Tray 1” later in this chapter.

Note

Do not fill the input tray above the media-fill mark on the media guides.

5. Slide the media into the printer as far as it will go (until the leading edge rests lightly against the printer) and adjust the media width guides until the media fits squarely and firmly between the media width guides without bending the media.

To print from tray 1 while in First mode

1. Adjust the media width guides in tray 1 to the correct media size.
2. Load the appropriate media. If the Automatic Paper Override is turned on in the printer control panel, then you will have approximately two minutes before the printer will automatically feed the default media.

   For more information on printer control panel settings, such as automatic paper override and the default paper size, see chapter 2, “Using the Printer Control Panel.” For more information on changing the override time, see the HP JetAdmin online help.

Note If the media width guides are not firmly against the edges of the media, then the media might not feed into the printer.

3. Print the file from your application.

Note The media loaded in the tray must match the media size selected in the application or printer driver, or the media might not feed or the media might jam.

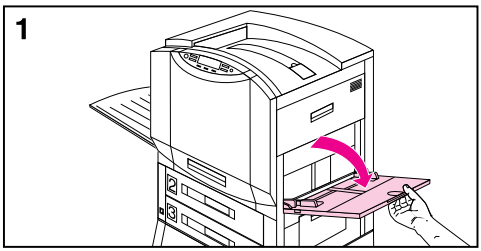
To print from tray 1 while in Cassette mode

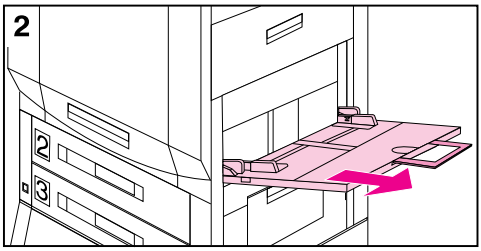
1. Load the media in tray 1.
2. Adjust the media width guides in tray 1 to the correct media size.

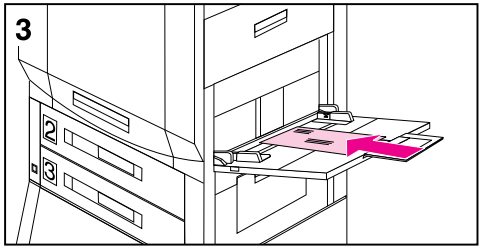
Note If the media width guides are not firmly against the edges of the media, then the media might not feed into the printer.

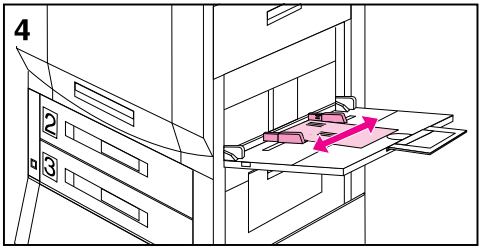
3. Set the media type and size in the printer control panel. For more information on configuring the printer control panel, see “Configuring Media Type and Size” in chapter 2.
4. Select the media type and size from your application or the printer driver.
5. Print the file from your application.

Printing Envelopes from Tray 1









Load up to ten envelopes in tray 1. Use Cassette mode when printing envelopes. For more information on Cassette mode, see chapter 2, “Using the Printer Control Panel.”

Caution

Never use envelopes with clasps, snaps, windows, coated linings, or self-stick adhesives. These items can damage the printer. Never try to print on both sides of an envelope. Media jams and printer damage can result.

To load envelopes in tray 1

1. Open tray 1.
2. Pull out the tray extension if the envelope is longer than the input tray.
3. Place up to ten envelopes in tray 1 between the media width guides, face up, with the back flap against the input tray and the return address area (short edge of the envelope) towards the printer.
4. Slide the media width guides until they touch both sides of the envelopes without bending the envelopes.
5. Set the envelope size in the printer control panel. For more information on configuring the printer control panel, see “Configuring Media Type and Size” in chapter 2.

To print envelopes from tray 1

1. Select envelope in your application or in the printer driver if your application does not support printing on envelopes. For more information on printing on envelopes, see the online help.
2. Set the envelope size and type in your application or the printer driver.
3. If your application does not have an option to automatically format an envelope, select Landscape for the page orientation.
4. Use the following table to set the margins for a return and mailing address on a Commercial #10- (Com10) or DL-sized envelope.

Type of Address	Left Margin	Top Margin
Return	0.50 in (12.70 mm)	0.50 in (12.70 mm)
Mailing	4 in (101.60 mm)	2 in (50.80 mm)

   For other sizes of envelopes, adjust the margins as necessary. Avoid printing over the area where the envelope's three back flaps (seams) meet.
5. Print the file from your application.

Printing Tips for Tray 1

- For letter- or A4-sized media, load the media with the **long edge** of the media toward the printer.
- For legal-, executive-, 11-by-17 inch, or A3-sized media, load the media with the **short edge** of the media toward the printer.
- Heavy paper stock is any paper heavier than 28 lb up to 58 lb (105 to 216 g/m²) bond. Always print heavy paper stock from tray 1. In the printer driver, select **Heavy Paper** as the paper type on the Paper tab to ensure the correct finish on the media. Also, use the left (face-up) output bin to prevent media jams.
- To print on custom-sized media, set the media size in your application or the printer driver. The printer will accept custom sizes between 3.90 by 7.49 in (99 by 190 mm) and 12 by 18.50 in (304.80 by 469.90 mm). If the media size set in your application or the printer driver does not match the size of the media being fed into the printer, then the printer might not feed the media or the media might jam.
- Do not use media heavier than 58 lb (216 g/m²) bond.
- Handle transparencies by the edges to avoid leaving fingerprints on the transparency.

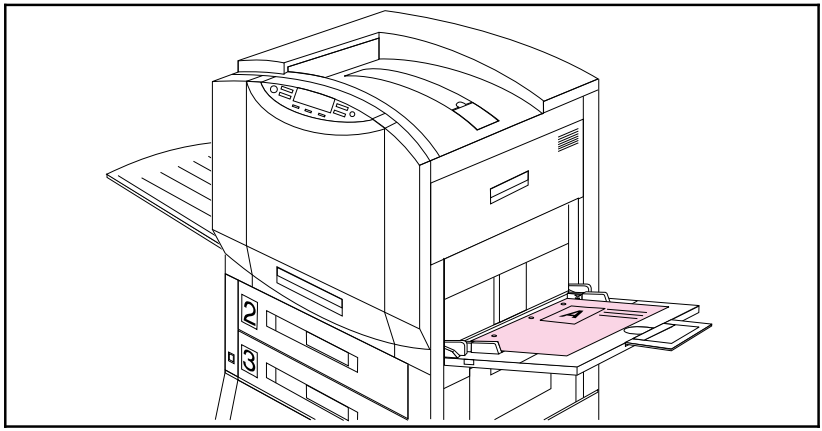
Caution Use only transparencies and glossy media that meet the specifications for this printer. Using an incorrect type of media can damage the printer. For more information on glossy media, see "Supported Media Weights and Sizes for Input Trays" earlier in this chapter.

Orienting Media in Tray 1

For **single-sided printing**, place media into the input tray with the side to be printed on face **up** (see figure 7). For letter- or A4-sized media, place the top of the page toward the rear of the printer and the long edge toward the printer. For media sizes larger than letter and A4, place the top (short) edge of the page toward the printer.

- Load letterhead and preprinted forms face **up**.
- Load media with prepunched holes with the holes **toward** the printer.

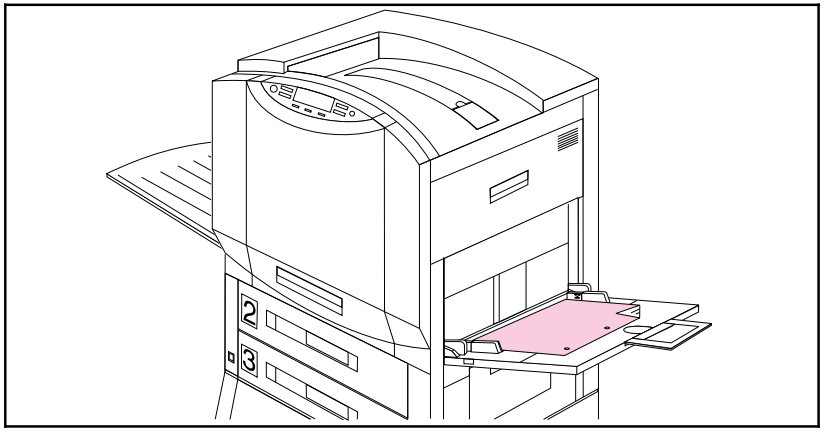
Figure 7



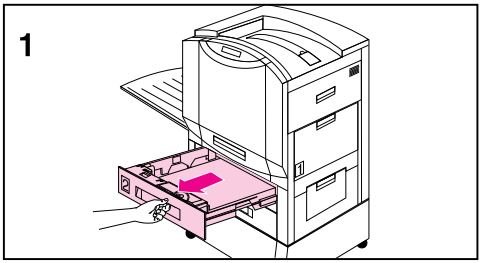
For **double-sided printing** with an optional duplexer, place media with the front (odd-numbered side) **down** (see figure 8). The back of the page (even-number) is printed first, and the front is printed second.

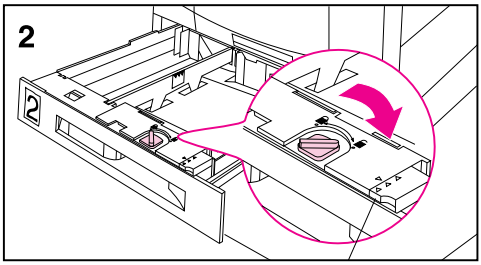
- Load letterhead and preprinted forms face **down**.
- Load media with prepunched holes with the holes **away from** the printer.

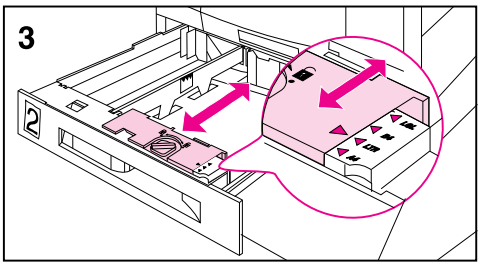
Figure 8

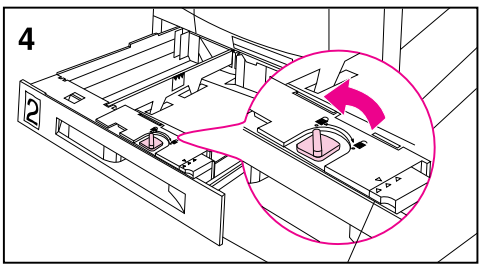


Printing from Trays 2 and 3









Load up to 500 sheets of 20 lb (75 g/m²) bond paper in trays 2 and 3.

To load media into trays 2 and 3

Caution

To avoid media jams, never open an input tray while the printer is printing from that input tray.

1 Firmly grip the handle in the center of the input tray, squeeze the release lever, and pull the input tray out until it stops.

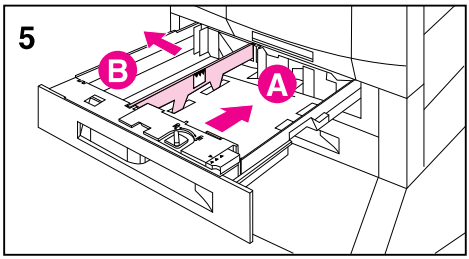
Note

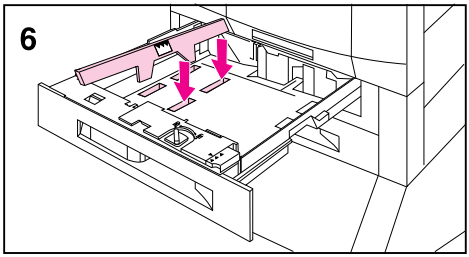
To use the media size currently configured in the input tray, go to step 8. To use a media size different from the current setting, go to step 2 to reconfigure the input tray.

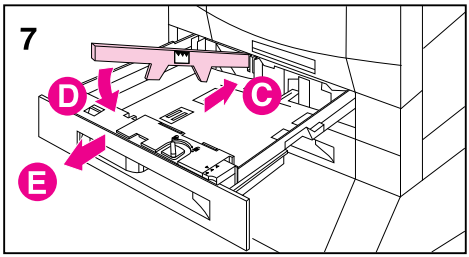
2 Turn the media guide lock to the unlocked position.

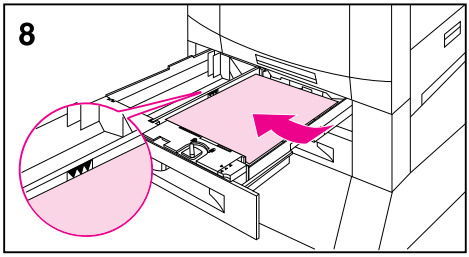
3 Slide the media width guides to the size that matches the media.

4 Turn the media guide lock to the locked position.









5 Adjust the left media guide by pushing it in (A) and lifting up and out (B).

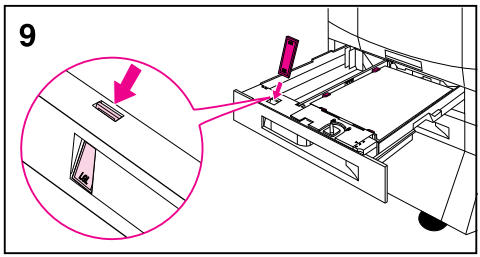
6 Position the left media guide over the correct media size marked on the input tray.

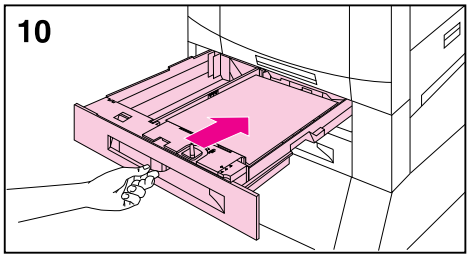
7 Press the left media guide into the rear slot (C), and then lower it down (D) into the front slot (E). Verify the guide is not skewed.

8 Load up to 500 sheets of 20 lb (75 g/m²) bond paper in the input tray. For information on loading different types of media, see “Orienting Media in Trays 2 and 3” later in this chapter.

Caution

Do not fill the input tray above the media-fill mark. Excessive media in the input trays can cause media jams.





9 Ensure that the media size tab on the front of the input tray is set to the correct media size.

10 Slide the input tray back into the printer.

11 Set the media type in the printer control panel. For more information on configuring the printer control panel, see “Configuring Media Type and Size” in chapter 2.

Note

Always configure the media type in the printer control panel to prevent users from printing on the wrong media type (such as transparencies instead of plain paper).

Note

If media curls or skews excessively during printing, open the input tray and turn the stack of media over. To avoid media jams, never open the input tray while the printer is printing.

To print from trays 2 and 3

1. Select the media type and size from your application or the printer driver. To set the media type and size in the printer control panel, see “Configuring Media Type and Size” in chapter 2.
2. Print the file from your application.

Printing Tips for Trays 2 and 3

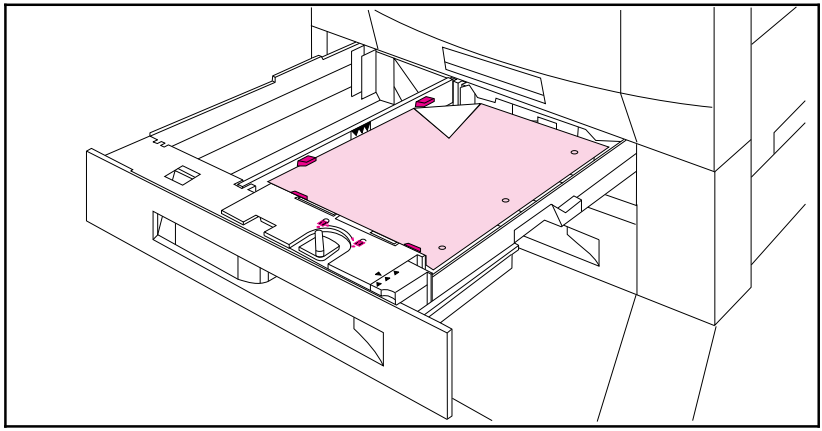
- Handle transparencies by the edges to avoid leaving fingerprints on the transparencies.
- Use transparencies that meet the media specifications for this printer. Using the incorrect type of transparencies can damage the printer. For more information on transparencies, see “Supported Media Weights and Sizes for Input Trays” earlier in this chapter.
- Use letterhead that meets the media specifications for this printer. For more information on letterhead specifications, see “Preprinted Forms and Letterhead” earlier in this chapter.

Orienting Media in Trays 2 and 3

For **single-sided printing**, place the media into the input tray with the side to be printed on face **down** (see figure 9).

- Load letterhead with the top toward the **rear** of the input tray.
- Load media with prepunched holes with the holes to the **right**.

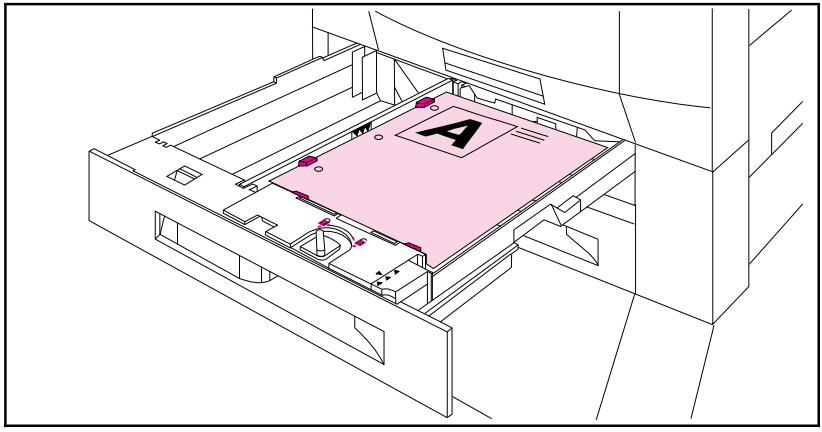
Figure 9



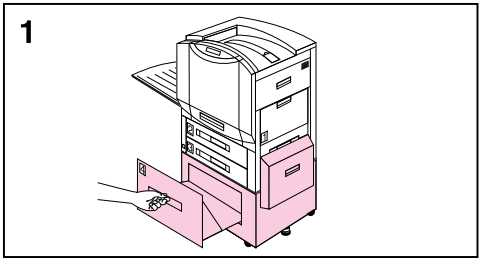
For **double-sided printing**, place the media with the front (odd-numbered side) **up** (see figure 10). The back of the page (even-number) is printed first, and the front is printed second.

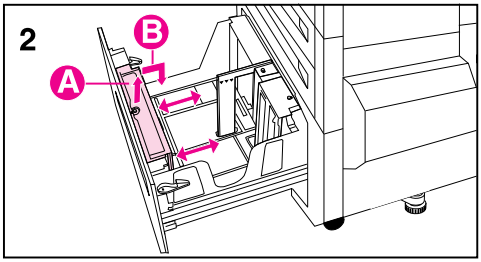
- Load letterhead with the top toward the **rear** of the input tray.
- Load media with prepunched holes with the holes to the **left**.

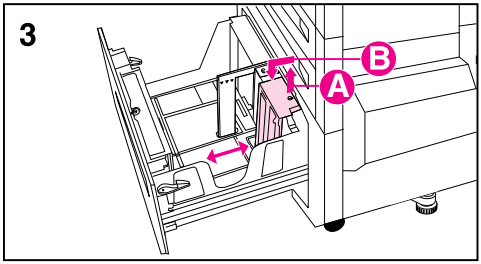
Figure 10

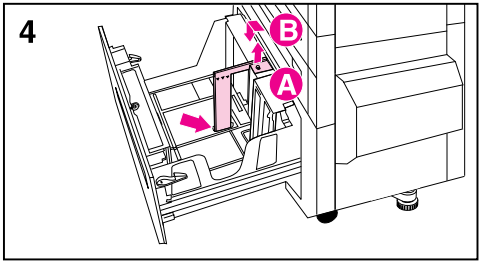


Printing from the Optional Tray 4









Load up to 2,000 sheets of 20 lb (75 g/m²) bond paper in tray 4.

To load media into tray 4

1. Firmly grip the handle in the center of the input tray, squeeze the release lever, and pull the input tray out until it stops.

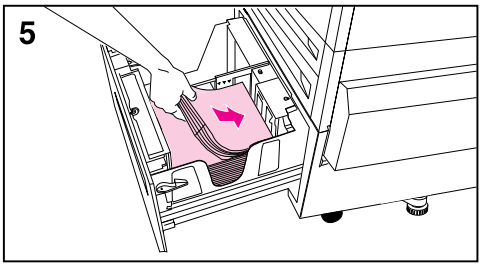
Note

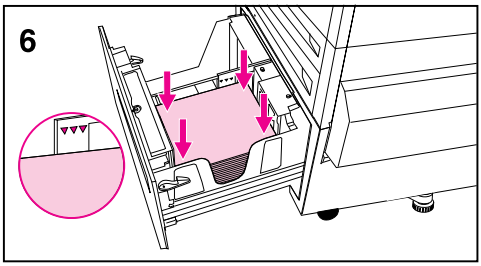
To use the media size currently configured in the input tray, go to step 5. To use a different size, go to step 2.

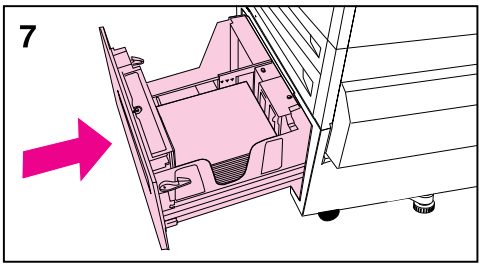
2. Adjust the front media guide by pulling up on the pin (A), placing the media guide into the slots on the top and bottom of the input tray that correspond to the media size you are loading (B), and pushing in the pin.
3. Repeat step 2 to adjust the back media guide.
4. Repeat step 2 to adjust the left media guide.

Note

For 11-by-17 inch media, move the left media guide to the back of the input tray.







5 Load up to 2,000 sheets of 20 lb (75 g/m²) bond paper into the input tray. For information on loading different types of media, see “Orienting Media in Tray 4” later in this chapter.

Caution

Do not place anything in the input tray to the left of the media guides because the input tray will not be able to lift the media to print and could damage the input tray. Also, do not fill the input tray above the media-fill mark on the left media guide. Excessive media can cause media jams.

6 Press down on all four corners of the media stack to ensure the media rests flat in the input tray.

7 Close tray 4.

8 Set the media type in the printer control panel. For more information on configuring the printer control panel, see “Configuring Media Type and Size” in chapter 2.

Note

Always configure the media type in the printer control panel to prevent printing on the wrong media type (such as transparencies instead of plain paper).

To print from tray 4

1. Select the media type and size from your application or the printer driver. To set the media type and size in the printer control panel, see “Configuring Media Type and Size” in chapter 2.
2. Print the file from your application.

Printing Tips for Tray 4

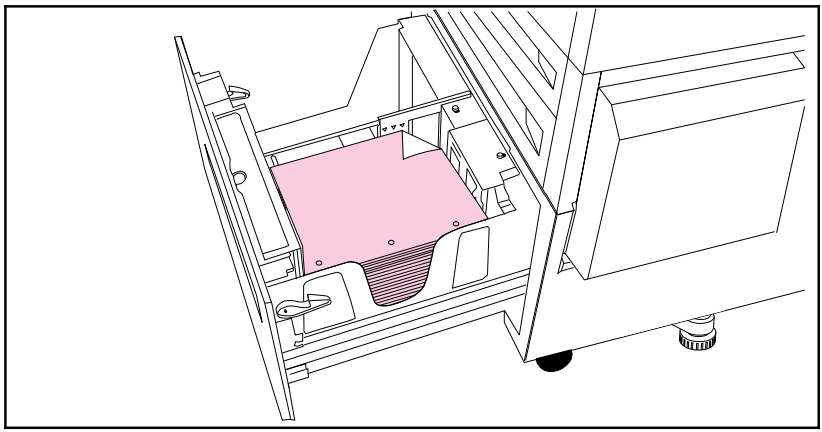
- Use letterhead that meets the media specifications for this printer (see “Preprinted Forms and Letterhead” earlier in this chapter).

Orienting Media in Tray 4

For **single-sided printing** on letter-, A4-, 11-by-17 inch, legal-, or A3-sized media, place the media into the input tray with the side to be printed on face **down** (see figure 11).

- Load letterhead with the top toward the **rear** of the input tray.
- Load media with prepunched holes with the holes to the **right**.

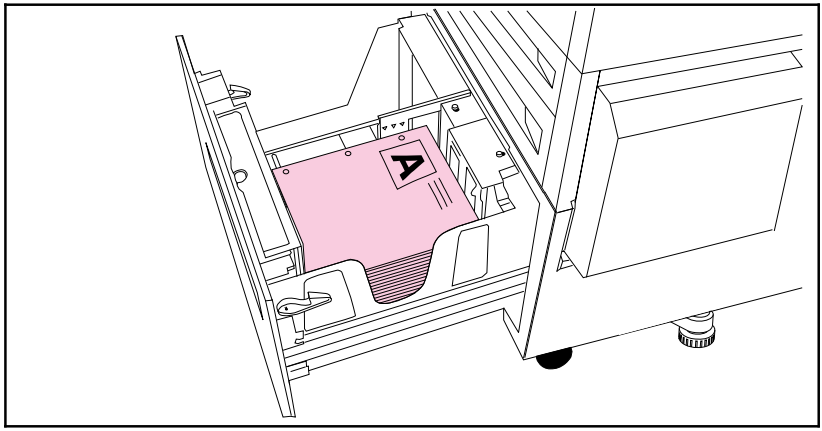
Figure 11



For **double-sided printing**, place media with the front (odd-numbered side) **up** (see figure 12). The back of the page (even-number) is printed first and the front is printed second.

- Load letterhead with the top toward the **rear** of the input tray.
- Load media with prepunched holes with the holes to the **left**.

Figure 12



Chapter 4

Using Color

Controlling Color Output with Printer Drivers

By varying the amount and pattern of the four toner colors applied to a page, the printer can produce more than 16 million colors. Use the printer drivers (the software installed with the printer) to control the color output for text, graphics, and photographs. The printer drivers enable computer applications to communicate with the printer and to use all of its features.

Access to the printer drivers depends on the computer system. For example, in a system using Microsoft Windows, use the application's Print Setup command to access your printer driver. For specific instructions on accessing the printer driver, see the online help files for your operating system.

Note Applications override most printer settings, such as media size, copies, and media source. When possible, use application settings for adjustments.

HP ColorSmart II Utility

HP ColorSmart II technology optimizes the color and halftoning for each element in a document (such as text, graphics, and photographs).

- The HP ColorSmart II utility uses the **Screen Match** setting to reproduce all elements in a document. The HP ColorSmart II utility uses a smooth halftone for photographs, raster graphics, and vector graphics, and uses a detail halftone for text. This setting provides consistent color treatment for everything on a page.
- When **Transparency** is selected in the Paper tab of the printer driver, the HP ColorSmart II utility chooses specialized colors to provide the best projection quality.
- The HP ColorSmart II utility is also the most reliable setting for PANTONE®* color reproduction. For more information on using PANTONE colors, see “PANTONE Colors” later in this chapter.

Manual Mode

For custom color printing jobs, you can turn off HP ColorSmart II defaults and set color adjustments manually. The Manual mode allows you to adjust the color settings for text, graphics, and photographs separately by manipulating the available settings. The following settings apply to all types of media:

- **Halftone**—Changes the method used to produce lighter shades of solid colors.
  - **Smooth**—Works well for solid areas, gradients, and photographs by smoothing out fine color gradations and providing accurate color reproduction.
  - **Detail**—Works well for text, multiple-colored text, line art, and detail-oriented graphics by providing sharper edges.
- **Color Adjustment**—Changes the color settings for elements on the page.
  - **Screen Match**—Color is optimized for reproducing of sRGB monitor colors. (The term sRGB is generally used to define RGB, red/green/blue, color output for monitors.) This setting maximizes the similarities between the appearance of the printed document and the document as it appears on the monitor. Screen Match is the printer default input color source.
  - **Vivid**—Saturation of colors is enhanced to produce high-impact color appearance.
  - **OHT**—(Overhead Transparency) For optimized color quality for projection.

All settings in the printer driver will remain in effect until they are changed. The online help describes in more detail the printer color settings and options, and their effect on your output.

ICC/CMS

Some applications and operating systems support more specific color management systems (CMS):

- ICC (International Color Consortium) is an international standard for color profiles that describe the color characteristics of devices, such as printers.
- ColorSync 2.x is Macintosh's color management system for System 7.
- ICM is Microsoft's color management system for System 7.

For information on downloading and selecting color profiles, see the online help.

If you are generating customized color profiles, use the same printer driver settings for both generating the profiles and printing.

Black and White

Selecting **Black and White** in the Color tab allows your color documents to be printed as black and white documents with shades of gray. This setting allows you to view preliminary copies of slides and hard copy output quickly and still interpret your color information. Printing in black and white also works well for color information that you wish to photocopy or fax.

Adjusting the Print Color and Quality Settings

For most color printing needs, HP ColorSmart II default settings will handle your color adjustments. For some print jobs, you might want to turn off HP ColorSmart II defaults and set color controls manually.

The following table shows default color settings in the printer driver and recommended printer driver settings for various types of printed output:

Printer Driver Setting/Desired Treatment	Page Objects				All Page Objects on Transparencies
	Text	Vector Graphics and Line Art	Raster Data (Text, Graphics, and Line Art)	Photographs	
HP ColorSmart II Default Setting	Screen Match Detail	Screen Match Smooth	Screen Match Smooth	Screen Match Smooth	Color optimized for transparencies
High Impact (high color saturation)	Vivid Detail	Vivid Detail	Vivid Detail	Screen Match Smooth	Color optimized for transparencies
PANTONE	Screen Match Detail	Screen Match Detail	Screen Match Smooth	Screen Match Smooth	N/A
Recommended Resolution of Input Data	N/A	N/A	600 dpi	> 200 dpi 300 dpi preferred	N/A

The recommended input data resolution for raster data is 600 dpi. The recommended input data resolution photographs is a dpi greater than 200 dpi (300 dpi preferred).

For more information on choosing the color settings to produce the most accurate color reproduction, see “Selecting Colors” on the next page or see the online help.

Selecting Colors

The computer and printer use different color processing methods. Other factors, such as print media and lighting, also influence and limit your ability to match colors from the screen to your output.

In addition to the printer driver color controls described in this chapter and the media you choose for printing, the following tools can help you to control the color output.

PANTONE Colors

PANTONE colors are certified CMYK (cyan, magenta, yellow, and black) and sRGB color values in the PANTONE color matching system. This option affects your output only if your application supports PANTONE colors. See the application's instructions for using these colors. The color and halftone settings and the media you use will affect the appearance of printed PANTONE colors.

For the best PANTONE color reproduction, set the printer driver to **ColorSmart II** or make the selections shown in the table in "Adjusting Print Color and Quality Settings" on the previous page. Or, if you are using the **Manual** setting, select **Screen Match** for the most accurate color reproduction. The device profiles for PANTONE Maps are created using the **Screen Match** setting; select this setting for best results. For more information on printer driver settings, see the online help or the readme file.

Color Swatch

With HP ColorSmart II selected, the Color Swatch program will send several pages of example colors and their accompanying RGB and CMYK values to the printer. These pages are useful for selecting or matching colors in applications that allow you to specify RGB or CMYK color values.

If you are using the RGB values, select **ColorSmart II** on the Color tab in the printer driver.

For information on using the Color Swatch utility, see the associated readme file.

Resolution Considerations for Graphics

Images and photographs can come from many different sources such as digital cameras, scanners, and photograph CD-ROMs. Typical file extensions for images and photographs are .bmp, .fpx, .gif, .jpg, .png, and .tif. For these images, resolution decisions should be made based on the content of the image. When possible, import images at the size you plan to use (actual size).

- Graphics and line art should be imported at the maximum resolution. For best reproduction of raster graphics and line art, the printer driver halftone settings should be configured to enhance the critical feature. If the fill smoothness is critical, select **Smooth**. If the edge detail is critical, select **Detail**.
- Images should be at least 200 dpi, and preferably 300 dpi. The printer driver settings should be set to **ColorSmart II** or **Manual**, with an image setting of **Smooth** and a color setting of **Screen Match**.

Note Resolutions of higher than 300 dpi will produce significantly larger files, but the print quality of the image will not necessarily improve.

Using Digital Cameras

When printing images captured by a digital camera, you might have to adjust the image quality. Adjust the images with the imaging software that came with the digital camera. Generally, for the most accurate color rendering, leave the digital image color mode in RGB. When you print the image, the printer will convert the RGB information to CMYK. For more information on adjusting the image quality of digital photographs, see the imaging software documentation.

For photographs, use **ColorSmart II** setting in the Color tab. Or, if you are using the **Manual** setting, select **Smooth Halftone** and **Screen Match** color mode. For more information on printer driver settings, see the online help.

Using Scanners

For the best image quality, make as many adjustments as possible in the scanner imaging software before scanning. These adjustments, many of which are listed below, can increase the resolution of the image, resulting in higher quality images:

- Select the appropriate image type (for example, color photograph, line art, or text).
- Select the optimum image resolution based on image type, at least 300 dpi for most images; however, select 600 dpi for line art, graphics, and text.
- Crop the image to scan only what you need. Scale the image for the optimum resolution when it is reproduced.
- Adjust the image sharpness, contrast, and brightness.
- Set the gamma correction to 2.2. For more information on scanner gamma correction, see the scanner's documentation.
- When possible, import images at the size you plan to use (actual size).

Adjusting the Color Balance

Caution Adjusting the color balance will change the printer's calibration. Because this procedure adjusts parameters within the printer hardware, it will affect all print jobs. Check with your system administrator before making any changes to the color balance.

The printer automatically recalibrates the color settings. However, you can adjust the color manually from the default settings by changing the densities of the four toners (black, cyan, magenta, and yellow). Changing the Detail Halftone Adjust and Smooth Halftone Adjust allow you to independently adjust the color of objects on a page that use the smooth and detail halftones (such as text and graphics).

Any settings you change remain in effect until you change them again or restore the factory defaults.

Do not perform the color balance adjustment procedure until all of the following troubleshooting methods have been completed:

- Experiment with the printer driver and application settings to adjust the color output. For more information on application settings, see the previous sections on printer driver settings in this chapter or the online help.
- Clean the density sensor in the printer. For more information, see "Cleaning the Density Sensor" in chapter 9.
- Complete the troubleshooting solutions in chapter 9 for the color printing problem you are experiencing.

To adjust the color balance

1 **Print the color adjust page.**

a Press **Go** and **– Value +** at the same time. COLOR ADJUST MENU will appear on the printer control panel display.

b Press **Item** until PRINT TEST PAGE appears on the display.

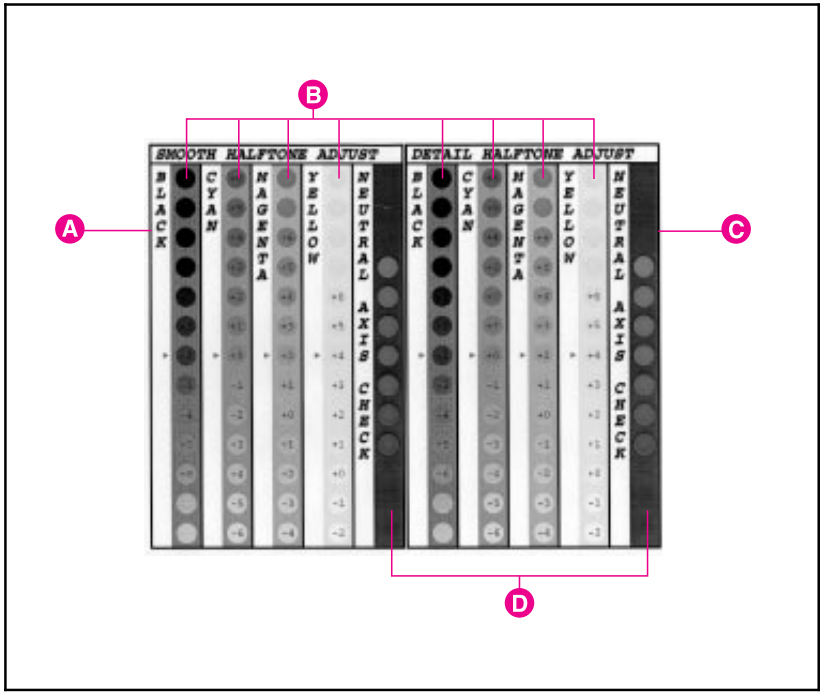
c Press **Select** to print the color adjust page.

d Press **Go** to exit the color adjust menu.

The color adjust page allows you to adjust of the printer's two halftone screens for each of the four colors (cyan, magenta, yellow, and black) for a total of eight adjustments. Make these adjustments after examining the color adjust page.

The color adjust page consists of two sections: the Detail Halftone Adjust section and the Smooth Halftone Adjust section. Each section shows the adjustment ramps for black, cyan, magenta, and yellow and a neutral axis check ramp which can be used to verify the adjustment after the correction values have been entered for each of the primary colors. An example of the color adjust page is shown below.

Figure 13



A Smooth Halftone Adjust section
B Color Ramps
C Detail Halftone Adjust section
D Neutral Axis

2 **Note the numbers beside the red arrows for later reference.** The color adjust page indicates the last set of saved color settings with a red arrow next to the saved setting. The default for each color is 0 (other possible settings include -6 through 6).

3 Determine the color adjustment numbers for each color in the high and low resolution screen adjusts.

a Examine the color adjust page from a distance of 3 ft (approximately 1 m).

b Find the circle of each color that most closely matches the background color. It might be necessary to squint slightly to match the colors.

c Record the number in the circle.

4 Enter the color adjustment numbers in the printer control panel.

a Press **Go** and **– Value +** at the same time. COLOR ADJUST MENU will appear on the display.

b Press **Item** until the option you want appears on the display. The options are listed below:

- BLACK SMOOTH VALUE =
- CYAN SMOOTH VALUE =
- MAGENTA SMOOTH VALUE =
- YELLOW SMOOTH VALUE =
- BLACK DETAIL VALUE =
- CYAN DETAIL VALUE =
- MAGENTA DETAIL VALUE =
- YELLOW DETAIL VALUE =

c Press **– Value +** to until the number recorded in step 3c appears on the display.

d Press **Select** to enter the number into the printer memory. An asterisk (*) appears to the right of the selection.

e Repeat steps 4a through 4d to adjust the color screens, as necessary.

5 Reprint the color adjust page.

a Press **Item** until PRINT TEST PAGE appears on the display.

b Press **Select** to print a new page.

c Re-examine the test page and verify that the color adjustment is correct.

- Verify that each of the color ramps (cyan, magenta, yellow, and black) matches the background for each color and has a red arrow next to the circle. If another circle matches the background more closely, return to step 4 to reset the values on the printer control panel to the number shown in that circle.
- Verify that the circles in the neutral axis areas of the test page are neutral gray (gray without a color tint), and then verify that one of the circles in the ramp is a color very close to the background. If the circles are not neutral gray, additional corrections to cyan, magenta, or yellow might be necessary. If there is an overall tint of color in the circles, make the adjustments suggested by the following table. However, the most accurate correction is determined by the circles in the individual black, cyan, magenta, and yellow ramps.

Overall Color of Circles	Correction if all Circles are Darker than Background	Correction if all Circles are Lighter than Background
Cyan tint	Reduce cyan	Increase magenta and yellow
Magenta tint	Reduce magenta	Increase cyan and yellow
Yellow tint	Reduce yellow	Increase magenta and cyan
Green tint	Reduce yellow and cyan	Increase magenta
Red tint	Reduce yellow and magenta	Increase cyan
Purple or blue tint	Reduce cyan and magenta	Increase yellow

For example, if the circles in the neutral axes show a green tint and the circle appears lighter than the background, the magenta ramp should be examined closely to determine if magenta should be increased.

Note

If the color settings are less accurate when you finish the color adjustment than when you started, reset all color values to 0 (zero) in the printer control panel and try the adjustment again.

Chapter 5

Using Fonts

Installing Fonts

If you are using Microsoft Windows, use the HP FontSmart utility to add fonts, delete fonts, and manage the fonts you use with the printer.

The HP FontSmart utility allows you to display the 45 fonts included with the printer on your computer screen. This approximation of screen display to printed result is known as WYSIWYG, short for “what you see is what you get.” The HP FontSmart utility also includes an additional 65 scaleable TrueType fonts on disk for Microsoft Windows 3.1 and later Windows versions. The HP FontSmart utility tools allow you to install, uninstall, and delete fonts, print samples of fonts, search for fonts, and sort fonts by various attributes.

The HP FontSmart utility manages True Type, Adobe™ Type 1, and bitmapped fonts from a single screen using the convenient “drag and drop” method. The left-hand side of the screen displays fonts that can be installed and the right-hand side displays all fonts that are currently installed in Microsoft Windows. To use a particular font, install that font in Microsoft Windows. See the HP FontSmart online help for more details.

To access the HP FontSmart utility from Windows

- Click **HP FontSmart** on the Fonts tab of the printer driver.
- For help with HP FontSmart utility, click **Help**.

To access the HP FontSmart utility from the program manager

- Open the HP LaserJet group.
- Click the HP FontSmart icon.
- Open the Toolbox and select the **Utilities** tab.
- Click **HP FontSmart**.
- For help with HP FontSmart utility, click **Help**.

If you are using Mac OS, use the HP LaserJet Utility to download TrueType and PostScript fonts to the printer's RAM or the printer hard disk.

To access the HP LaserJet Utility from Mac OS

- Double-click the HP LaserJet Utility icon.
- For help with the HP LaserJet Utility, click **Help**.

Using Internal TrueType Fonts

TrueType is a font-scaling technology developed by Microsoft and Apple. HP has added 15 TrueType fonts to the printer to match Microsoft Windows TrueType fonts. When you use these TrueType fonts in Microsoft Windows applications, there is no downloading of bitmapped printer fonts because the TrueType fonts are already installed in the printer. This, in turn, improves printing performance.

See the Microsoft Windows documentation for specific instructions on using TrueType fonts with Microsoft Windows.

Understanding the Printer Font Defaults

The default PCL font for this printer is 12-point Courier in the PC-8 symbol set. This is the font the printer uses unless you change the default font.

To select the default font

- Select a default font in your application, and the application will request that font in place of the printer default font.
- Send a font selection command using a printer command to request a font in place of the default. For more information on printer commands, see the *PCL Technical Reference Manual* for this printer.
- Select a different default font using the printer control panel.

Font Selection Priority

This is the order in which the printer selects its fonts:

1. The printer looks for a downloaded host-based font or “soft font” in printer RAM.
2. The printer checks for internal fonts (the standard HP LaserJet font set, including the internal TrueType fonts).

When choosing a font, the font must be available from one of the above sources. If the font you request is not available, the printer selects the closest match based on individual font characteristics.

If both a scaleable font and a bitmapped font are available from the same source, you will obtain better results by choosing the bitmapped font, rather than the scaleable font.

Selecting Fonts

There are two ways to select fonts: through an application or through the printer control panel.

Selecting Fonts Through Software

For information about selecting fonts through the software, look for topics such as “font selection,” “base font,” “printer setup,” “print options,” “font appearance,” “change font,” or “select type” in the software documentation. Usually, you can specify a symbol set when you run the software’s printer setup program.

Entering Symbols into Text

The software documentation contains instructions for entering special symbols into the text. See in the software documentation’s index for phrases such as “compose feature,” “composite characters,” “symbol sets,” “character sets,” “code pages,” or “extended characters.”

Selecting PCL Fonts Through the Printer Control Panel

If the software does not allow you to select fonts through its menus, select the PCL default font through the printer control panel. When you select the PCL default font through the printer control panel, specify the following items:

- Font source
- Font number
- Point size or pitch
- Symbol set

The above items can be found on the PCL Font List.

Note A font selected through the software will override a font selected through the printer control panel.

To select the default PCL font using the printer control panel

1. Press **Menu** until INFORMATION MENU appears on the printer control panel display.
2. Press **Item** until PRINT PCL FONT LIST appears on the display.
3. Press **Select** to print the font list.
4. Find the font source and number on the font list that corresponds to the font you want. For more information on understanding the font list, see "Interpreting the PCL Font List" later in this chapter.
5. Press **Menu** until PRINTING MENU appears on the display.
6. Press **Item** until PCL FONT SOURCE appears on the display.
7. Press **– Value +** until the font source you want appears on the display. The following is a list of options:
   - SOFT—Soft fonts downloaded from an application to the printer's RAM, which will be cleared from the printer's memory when the printer is turned off
   - INTERNAL—Internal fonts on the printer hard disk
   - SLOT <n>—DIMM-based fonts, <n> is the slot the DIMM is located in
8. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
9. Press **Item** until PCL FONT NUMBER appears on the display.
10. Press **– Value +** until the font number appears on the display.
11. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
12. Press **Item** until PCL POINT SIZE appears for proportional scaleable fonts or PCL PITCH appears for fixed-space fonts.

Note The pitch and point size selection is not available for bitmapped fonts.

13. Press **– Value +** to select the point size or pitch.
14. Press **Select** to save the selection. An asterisk (*) appears to the right of the selection.
15. Press **Go** to bring the printer online.

Printing a List of Available Printer Fonts

Use the printer control panel to quickly print a list of available fonts.

To print a font list from the printer control panel

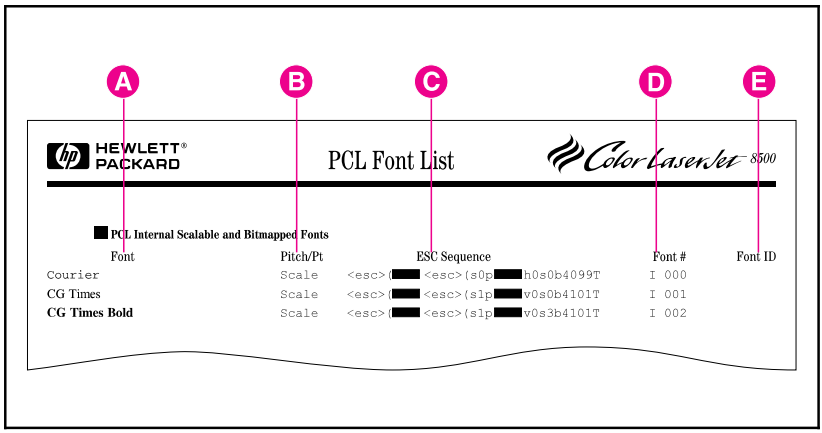
1 Press **Menu** until INFORMATION MENU appears on the printer control panel display.
2 Press **Item** until PRINT PCL FONT LIST or PRINT PS FONT LIST appears on the display.
3 Press **Select** to print the font lists. The printer will automatically bring itself online.

Microsoft Windows users can also use the HP FontSmart utility and Mac OS users can use the HP LaserJet utility to print a list of available fonts. For more information on using the HP FontSmart utility or HP LaserJet utility, see the online help.

Interpreting the PCL Font List

The following figure is an example of a PCL font list.

Figure 14



A Font
The name of the font.

B Pitch/Pt
The specified pitch or point size of the font. CPI is the number of characters per inch of the fixed pitch font. Point size is the font height.

C ESC Sequence
A PCL escape command that is used to select the designated font. The escape sequence contains a shaded box followed by v or h. This indicates that you must enter the point size (for example, 14.25v for

14.25-point text) or pitch (for example, 12.00h for 12 characters per inch).

D Font #
The number used in the printer control panel to select internal DIMM-based fonts or downloaded soft fonts.

E Font ID
The identification number you assign to soft fonts when you download them through the software.

Using PostScript Fonts

The printer contains 35 scaleable PostScript fonts drawn from 11 font families, all licensed by Adobe. Over 650 additional fonts that are compatible with the printer are available from the Adobe Type Library. These fonts can be purchased and used in the printer if the PostScript option has been installed.

Since PostScript fonts require software support, check the software documentation for information about using PostScript fonts. See the following sources for more information about writing PostScript applications:

- *PostScript Language Program Design*. Adobe Systems Incorporated. Menlo Park: Addison-Wesley Publishing Company, Inc., 1988.
- *PostScript Language Reference Manual*. Second Edition. Adobe Systems Incorporated. Menlo Park: Addison-Wesley Publishing Company, Inc., 1990.
- "PostScript Language Supplements," various versions. Adobe Systems Incorporated, Developer Relations Group.
- *PostScript Language Tutorial and Cookbook*. Adobe Systems Incorporated. Menlo Park: Addison-Wesley Publishing Company, Inc., 1985.

Note

You *cannot* use the PostScript fonts in combination with the PCL fonts residing in the printer, or with other fonts supported by PCL in the same print job. Personality switching enables you to use either the PostScript or PCL supported fonts, but not both simultaneously.

Using Fonts on a Network

If the printer is connected to a network, be sure to check with your system administrator before:

- Changing the default font through the printer control panel
- Downloading or removing soft fonts and typefaces
- Turning the printer off, which removes soft fonts (fonts downloaded to the printer RAM)

Following these guidelines will conserve printer memory and help to avoid unexpected printer output. Your network operating system might automatically protect each user's print job from the effects of other print jobs in the system. Check with your system administrator.

To optimize the performance of the printing environment when using different fonts and typefaces, consider the following options:

- Encourage the use of the printer's extensive internal scaleable font selections. PCL and TrueType fonts are available in PCL mode, and PostScript fonts are available in PostScript mode.
- To conserve printer memory, download only soft fonts and scaleable fonts needed.
- If you require several downloaded fonts, you can purchase additional memory from a local authorized HP dealer.
- Some applications automatically download fonts at the beginning of each print job. It might be possible to configure those applications to download only the soft fonts that are not already resident in the printer. See the application documentation for more information.

Adding Support for Fonts to an Optional Printer Hard Disk

When using fonts stored on the printer hard disk, the printer driver must contain information about the size, shape, and style of these fonts so that it can format the text correctly. Therefore, fonts must be installed on both your computer and the printer hard disk before they can be used.

Installing Fonts on Your Computer

For Microsoft Windows, install fonts through the HP FontSmart utility or the Windows control panel. When the fonts are installed, the printer driver will recognize the fonts and list them in your applications. If the fonts are listed in the software's menus, then you can install the fonts on your system through HP FontSmart utility.

For Mac OS, install fonts through the HP LaserJet Utility. When the fonts are installed, the printer driver will recognize the fonts and list them in your applications.

For MS-DOS® applications, request a printer driver for the new fonts from the software vendor. Some printer drivers for HP font products are also available from HP's Distribution Center (U.S. only) or a local authorized HP dealer. For information on authorized HP dealers, see "Worldwide HP Sales and Service Offices" in appendix E.

Install Fonts to Printer Hard Disk

Install fonts to the printer hard disk using:

- The **Fonts** tab of the PCL printer driver
- The **Fonts** tab of the PS 3.1 printer driver (Microsoft Windows 3.1 only)
- HP LaserJet Utility for Mac OS
- Other font downloading utilities

Note

Although the software might list a new font in its menus, the font might not be installed in the printer. The printer driver downloads fonts to the printer's RAM as needed for each print job, but when the printer is turned off, the fonts are erased from the printer's RAM. For more information on installing the font onto the printer hard disk, see the online help that came with the font.

Using Special Effects with Type

The printer supports special font effects, such as patterns, reverse printing, mirrored text, and advanced font rotation. Check your application's documentation to see if it supports these features. Programmers can find complete instructions for using special font effects in the *PCL 5 Technical Reference Manual*.

HP Custom Font Services for Microsoft Windows

HP custom soft fonts are now available. Design a custom soft font package to fit your particular needs. Some examples include:

- Any font or typeface from any HP standard font product or typeface collection
- Bar codes, including 3 of 9, Codeabar, UPC, and others
- Custom symbol set mappings
- Signatures and logos
- Macros for automatically printing standard forms with your data

For information on these services, contact HP Corvallis Service Center at (541) 715-5757. Outside the U.S., contact a local authorized HP dealer.

Chapter 6

Printer Interfaces

Parallel Configuration

This printer has a parallel port and two EIO (enhanced input/output) slots. If the printer does not have an HP JetDirect internal print server in an EIO slot, use the standard bidirectional parallel interface (IEEE-1284 compliant, 10 ft/3m, HP part number C2946A). The parallel port will transmit data to the printer quickly; however, it is not usually as fast as a network interface card. The cable must have a **25-pin male/micro 36-pin male (“C” size) connectors** and be no longer than 10 ft (approximately 3 m). For information on ordering parallel cables, see “Accessories, Options, and Related Products” in chapter 9.

Note

The bidirectional parallel interface (IEEE-1284 compliant) is compatible with Centronics parallel interfaces. To use its enhanced capabilities (such as bidirectional communication between the computer and printer, faster transfer of data, and automatic configuration of printer drivers), you need software that supports these features. Contact the software vendor to see if the software supports bidirectional parallel features.

Note

Automatic I/O switching can be adjusted for maximum performance by using the timeout feature. When using multiple ports, if data from other ports appears in the middle of the print job, increase the I/O timeout value. For more information on changing the I/O timeout value, see “Setting the I/O Timeout” in chapter 2.

For specific information about setting up the computer and printer to print through the parallel interface, see the instructions in the getting started guide.

Network Connections

The printer comes equipped with two EIO slots for network connections through HP JetDirect internal print servers.

An HP JetDirect internal print server provides increased printing performance when printing from a network. In addition, an HP JetDirect internal print server provides the ability to place the printer anywhere on the network. This eliminates the need to attach the printer directly to a server or a workstation and allows you to place the printer closer to the network users.

Available Networking Software Solutions

HP offers several HP JetDirect internal print servers, including Token, combo, and 10/100-Base T configurations. For information on ordering HP JetDirect internal print servers, see “Accessories, Options, and Related Products” in chapter 9. HP JetDirect print servers are offered that support the following network operating system versions.

Network Operating System	Version	Protocol
Novell NetWare	3.11, 3.12, 4.0, 4.1	IPX/SPX
Microsoft Windows NT	4.0	TCP/IP, IPX/SPX
Microsoft Windows 95 Networking	—	IPX/SPX, TCP/IP
UNIX	HP-UX 9.X, 10.X Solaris 2.3, 2.4, 2.5 SunOS 4.1.3, 4.1.4 SCO UNIX 386, 6.2, 4.2, 5.0* IBM AIX 3.2.5 and later* LPD	— — — — TCP/IP —
IBM OS/2 Warp Server	3.0, 4.0	DLC/LLC, TCP/IP
Apple EtherTalk or LocalTalk	—	AppleTalk
* Software is provided directly by the operating system vendor. For software for other operating systems, see HP FIRST document #7697.		

For more information on the HP JetAdmin software, see the *HP JetDirect Print Server Software Installation Guide*. For more information on types of print servers and network operating systems that are supported by HP JetDirect print servers, contact a local authorized HP dealer.

LocalTalk Configuration

The LocalTalk interface enables you to print directly from a Mac OS computer or from a Mac OS computer on a LocalTalk network. If you have a HP JetDirect Combo card, then you can connect to a LocalTalk network. However, not all internal print server cards are equipped to connect to a LocalTalk network. For specific information on setting up the computer and printer to print through the LocalTalk interface, see the instructions in the *HP JetDirect Print Server Software Installation Guide*.

Macintosh DIN-8 Cable

If you are using a Mac OS computer to print directly to the printer without a network, use a standard Macintosh DIN-8 printer cable (HP part number 92215S). This cable cannot be used in a LocalTalk network configuration.

LocalTalk Network Configuration

To connect the printer to a Mac OS computer on a LocalTalk network, use the HP LocalTalk Cable Kit (HP part number 92215N). You will need one kit for each printer and an additional kit for each Mac OS computer not already connected to the network.

Enhancing Network Performance

HP JetDirect print servers support multiple protocols and multiple network operating systems. With the HP JetDirect solution, you can attach a printer directly to the network at any location, allowing you to utilize full network speed and maximize print throughput while providing increased ease of use and network management.

The HP JetAdmin software is provided with printers that are connected to the network through HP JetDirect internal print servers. Use the HP JetAdmin software and HP JetDirect internal print servers together for a complete network printing solution. For more information, see the *HP JetDirect Print Server Software Installation Guide*.

Novell NetWare 3.*x* and 4.*x* Based Products

When using Novell NetWare 3.*x* and 4.*x* with the HP JetDirect print server, Queue Server Mode will provide optimum printing performance over Remote Printer Mode. For more information, see the *HP JetDirect Print Server Software Installation Guide*.

IBM OS/2 Warp Server Networks

Although OS/2 supports virtual memory, better performance might be obtained by increasing server RAM, especially if the swapper.dat file is large. This depends on the number of network printers and the type of printer driver. Optimum performance for the maximum printer configuration might require at least 16 MB of server RAM.

Microsoft Windows 3.1, Windows 3.11, Windows 95, and Windows NT 4.0 Networks

For Microsoft Windows 3.1, Windows 95, and Windows NT 4.0 networks, the HP JetAdmin software works as a Windows application and supports native NDS (Novell Directory Services) as well as bindery for HP JetDirect connected peripherals.

For Peer-to-Peer Microsoft Windows 95 networks, the HP JetAdmin software works as a Windows application to manage HP printers on a TCP/IP or IPX/SPX-compatible printer network using an HP JetDirect print server.

Also for Microsoft Windows NT 4.0 networks, the HP JetAdmin software supports TCP/IP or IPX/SPX environments to connect to printers.

For more information, see the *HP JetDirect Print Server Software Installation Guide*.

UNIX Networks

The HP JetAdmin software provides a TCP/IP-based solution for configuring and managing HP JetDirect connected printers on a variety of HP-UX, Solaris, and SunOS host spoolers.

Chapter 7

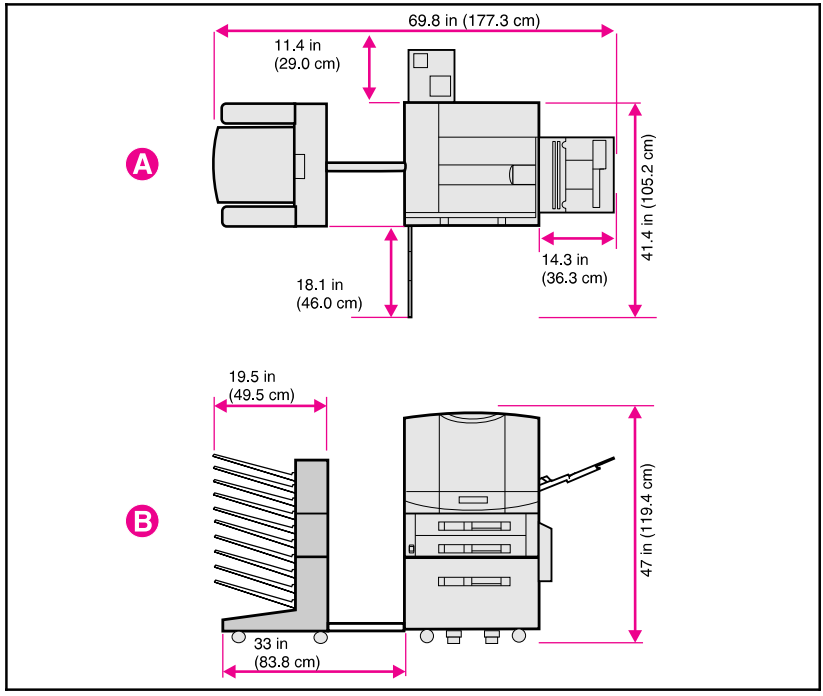
Maintaining the Printer

Making Room for Printer Maintenance

Caution To prevent damage to the printer, remove the imaging drum and all toner cartridges before moving or shipping the printer.

Sufficient space is required on all sides of the printer for removing consumables when performing printer maintenance. For more information on maintenance procedures, see the installation guide with each consumable. The following figure shows the space required around the printer for maintenance.

Figure 15



A Top View (with the optional multi-bin mailbox and tray 4)
B Side View (with the optional multi-bin mailbox and tray 4)

Locating Printer Consumables

The following figure shows the location of each printer consumable. A consumable is any part of the printer that can be replaced after its useful life has been exceeded.

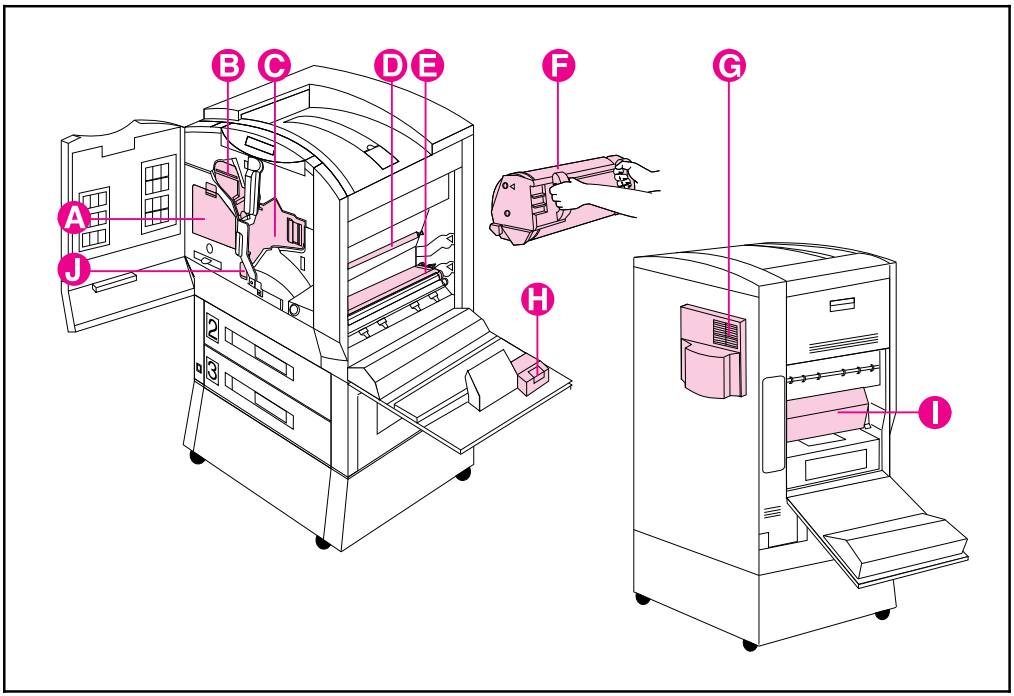


Figure 16

A Color Toner Cartridges
B Black Toner Cartridge
C Imaging Drum
D Cleaning Roller
E Transfer Belt
F Transfer Drum
G Air Filters
H Charcoal Filter
I Fuser
J Transfer Charger

For information on replacing the consumables, see the instructions included with each consumable.

Note The color toner carousel will not rotate unless the clear door is closed, the imaging drum and black toner cartridge are installed (including removing the orange seal from the black toner cartridge and swinging the upper lever to the left), and the upper right door is closed.

Frequency for Replacing Printer Consumables

The following table lists the approximate schedule for replacing consumables and the printer messages that appear when each of the consumables should be replaced. Part numbers for each consumable can be found in “Accessories, Options, and Related Products” in chapter 9. For best print quality output, use HP consumables that have been designed to work together in this printer.

Consumable	Printer Message	Page Count	Approximate Time Period[2]
Black Toner Cartridge	TONER LOW REPLACE BLACK	15,000 pages[1]	2.5 months
Color Toner Cartridges Cyan Magenta Yellow	TONER LOW REPLACE [color]	7,000 pages[1]	1.1 to 1.6 months
Drum Kit Imaging Drum Air Filters (2) Hand Wipe	DRUM LIFE LOW REPLACE DRUM KIT	50,000 black-and-white only pages, or 12,500 color pages	8.3 months black-and-white only pages, or 2.1 months color pages
Transfer Kit Transfer Drum Transfer Belt Transfer Charger Cleaning Roller Charcoal Filter Hand Wipe	TRANSFER KIT LOW REPLACE KIT	150,000 black-and-white only pages, or 75,000 color pages	25 months black-and-white only pages, or 12.5 months color pages
Fuser Kit (110 Volt) Fuser Paper Rollers (6) Hand Wipe	FUSER LIFE LOW REPLACE KIT	100,000 black-and-white only pages, or 50,000 color pages	16.7 months black-and-white only pages, or 8.3 months color pages
Fuser Kit (220 Volt) Fuser Paper Rollers (6) Hand Wipe	FUSER LIFE LOW REPLACE KIT	100,000 black-and-white only pages, or 50,000 color pages	16.7 months black-and-white only pages, or 8.3 months color pages

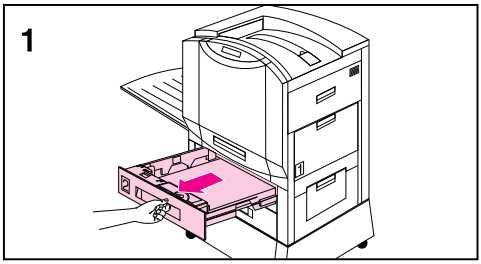
1 Approximate average letter-size page count based on 5% coverage of individual toner colors. This value can be used to estimate other levels of coverage from 2% to 35%. For example, 5,000 pages at 5% coverage is approximately 2,500 pages at 10% coverage. Estimates made in this manner are only approximate, and usage conditions and print patterns can cause the results to vary.

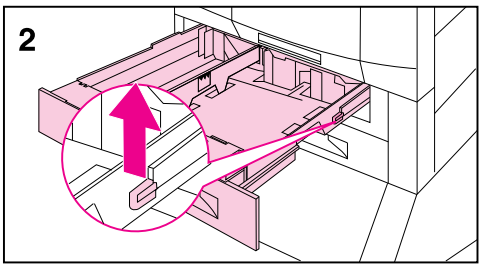
2 Approximate life based on printing 6,000 pages per month.

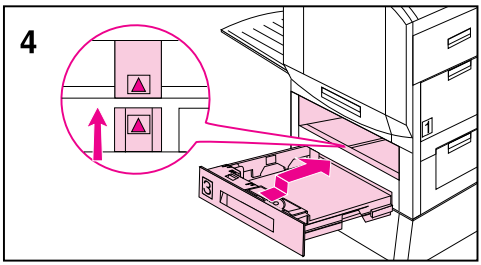
For an explanation of printer control panel messages, see chapter 8, “Printer Control Panel Messages.”

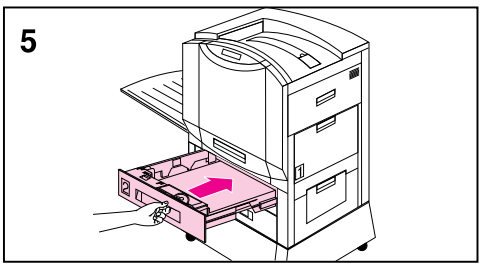
HP encourages responsible disposal of HP Color LaserJet printer consumables through its printing supplies recycling program. For details on this program, see “Environmental Product Stewardship Program” in appendix D. All consumables listed above can be disposed of through the printing supplies recycling program.

Removing and Replacing Trays 2 and 3









Remove trays 2 and 3 when replacing the paper rollers.

To remove and replace trays 2 and 3

1. To remove the tray, open the tray until it stops.
2. On the right side of the tray by the slider, lift up on the tab to release the tray.
3. Lift the tray up slightly and remove it from the printer.
4. To replace the tray, align the arrow on the back side of the tray with the arrow inside the printer.
5. Slide the tray into the printer and the tab will click into place.

Chapter 8

Printer Control Panel Messages

Printer Messages

The following table lists the printer messages. If a printer message has a numeric prefix, it is listed in order of the number beside the printer message. Printer messages without numeric prefixes are listed in alphabetical order following the numeric messages.

Message	Description	Recommended Action
**********	Displayed during startup as the individual tasks begin initializing.	No action is required.
20 INSUFFICIENT MEMORY	More data has been received from the computer than fits in the printer's internal memory.	No action is required. Only the amount of data that fits in the printer's internal memory is printed.
22 EIO BUFFER OVERFLOW	The EIO buffer has overflowed during a busy state.	The current data in the print buffer will be lost. No action is required.
22 PARALLEL IO BUFFER OVERFLOW	Indicates the parallel buffer has overflowed.	Printing can continue, but some data might be lost.
40 EIO N BAD TRANSMISSION	An EIO accessory connection has been abnormally broken. **N = EIO Slot Number** 1 = Bottom EIO Slot 2 = Top EIO Slot	Check that all cables are connected to the EIO ports and that the EIO board is seated properly. If possible, print to another network printer to verify the network is working properly. All data in the print buffer will be lost.
41.2 PRINTER ERROR	Indicates that a laser scanner error has occurred.	Open and close the front door of the printer to remove any remaining pages from the printer. Reprint the job. If the problem persists, turn the printer off and on to reset the printer.

Message	Description	Recommended Action
41.3 UNEXPECTED PAPER SIZE LOAD TRAY 1 <Type> <Size>	Tray 1 is configured for one media size, but the printer detects a different size being fed from the tray 1. <Type> is the media type specified in the printer driver or application. <Size> is the media size specified in the printer driver or application.	Load the proper size media in tray 1, or if the printer is in Cassette mode, reconfigure the input tray for the media size in the input tray. For more information on configuring input trays, see “Configuring Media Type and Size” in chapter 2.
41.3 UNEXPECTED PAPER SIZE LOAD TRAY 1 <Width> <Length>	Tray 1 is configured for a custom media size, but the printer detects a different size being fed from the tray 1. <Width> is the media width selected in the application or printer driver. <Length> is the media length selected in the application or printer driver.	Load the requested size media in tray 1, or if the printer is in Cassette mode, reconfigure the input tray for the media size in the input tray. For more information on configuring input trays, see “Configuring Media Type and Size” in chapter 2.
41.5 UNEXPECTED PAPER TYPE LOAD TRAY X <Type> <Size>	The printer was expecting one type of media to be fed from an input tray and a different type was fed. For example, the printer was expecting transparencies and plain paper was fed. X is the input tray number. <Type> is the media type specified in the printer driver or application. <Size> is the media size specified in the printer driver or application.	Open and close the front door to remove the page from the printer. Verify that the correct media is loaded in the input tray and the printer control panel is configured correctly. For more information on configuring input trays, see “Configuring Media Type and Size” in chapter 2.
49.XXXX ERROR CYCLE POWER	Indicates that a firmware error has occurred, or corrupt data was sent to the printer.	Verify that all cables are connected. Turn the printer off and on to reset the printer.

Message	Description	Recommended Action
50.X FUSER ERROR CYCLE POWER	Indicates that a fusing assembly malfunction has occurred. **X = Description** 1 = Low Temperature Error 2 = Warmup Error 3 = High Temperature Error 4 = Fuser Drive/Power Unit Error 6 = Heater Error	Turn the printer off and on to reset the printer. For a 50.3 error, turn the printer off for 30 minutes to allow the fuser to cool, and then turn the printer on. If the condition persists, contact a local authorized HP dealer or service representative for service.
51 LASER ERROR CYCLE POWER	Indicates that a laser malfunction has occurred.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
52 SCANNER ERROR CYCLE POWER	Indicates that the scanner motor is not turning properly.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.

Message	Description	Recommended Action
53.XY.ZZ ERROR DIMM SLOT Y	Indicates that a memory error occurred during the configuration and validation of DIMM memory. **X Hardware Type** 0 ROM 1 RAM 2 FLASH **Y Hardware Device** 0 Onboard ROM/RAM 1 DIMM slot 1 2 DIMM slot 2 3 DIMM slot 3 4 DIMM slot 4 5 DIMM slot 5 6 DIMM slot 6 7 DIMM slot 7 8 DIMM slot 8 **ZZ Error** 0 Unsupported memory 1 Unrecognized memory 2 Unsupported memory size 3 Failed RAM test 4 Exceeded maximum RAM size 5 Exceeded maximum ROM size 6 Invalid DIMM speed, check DRAM 7 DIMM is reporting information incorrectly 10 DIMM address conflict 11 PDC XROM out of bounds 12 Could not make temporary mapping 13 Invalid RAM type 14 DIMM not paired properly	Verify that the DIMM board is installed correctly and the DIMMs are configured correctly. Turn the printer off and on to reset the printer. If necessary, remove and replace the DIMM that caused the error. For more information about installing and configuring DIMMs, see appendix A, “DIMM Installation.” If the condition persists, contact a local authorized HP dealer or service representative for service.
54.1 TEMPERATURE SENSOR ERROR CYCLE POWER	Indicates that the humidity and temperature sensor in the printer has malfunctioned.	Turn the printer off and contact a local authorized HP service representative. **Do not operate the printer in this condition or the printer can be damaged.**

Message	Description	Recommended Action
54.2 CAROUSEL ERROR CYCLE POWER	Indicates that the color toner carousel is not working correctly.	Open the color toner clear door and look for an obstruction. If the message does not clear after closing the doors, turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
54.3 DENSITY SENSOR ERROR CYCLE POWER	Indicates a density sensor error, or the printer is not receiving data back from the density sensor.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
55 PRINTER ERROR CYCLE POWER	Indicates a printer command error. The commands cannot be exchanged between the printer and its controller.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
56.1 ERROR CYCLE POWER	Indicates an input feed error (such as requesting to feed transparencies through the duplexer), or the input tray is not installed.	If the input tray you are trying to print from is not installed, install the input tray. Turn the printer off and on to reset the printer.
56.2 ERROR CYCLE POWER	Indicates an illegal output error. For example, the multi-bin mailbox is not installed and it was selected as the output destination, or there are transparencies in the duplexer.	Open the printer and remove media from the paper path. Verify that the media type is set in the printer control panel. If the condition persists, turn the printer off and on to reset the printer. For more information on configuring input trays, see “Configuring Media Type and Size” in chapter 2.
57.X FAN FAILURE	One of the cooling fans has failed. **X = Fan Type** 1 = Rear Output Fan (Motor 1) 2 = Rear Input Fan (Motor 2) 3 = Left Output Fan (Motor 3)	Turn the printer off and contact a local authorized HP service representative immediately. **Do not operate the printer in this condition or the printer can be seriously damaged.**
58.1 ERROR CYCLE POWER	Indicates that the paper diverter inside the upper right door is out of position, causing an error feeding media from tray 1.	Open the upper right door and check for a media jam or misfed media. Turn the printer off and on to reset the printer.

Message	Description	Recommended Action
59.X MOTOR ERROR CYCLE POWER	Indicates that the main printer motor is not working properly. **X = Description** 0 = General Error 1 = Startup Error 2 = Rotation Error	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
62.X SERVICE CYCLE POWER	Indicates that a problem exists with the internal memory. **X = Description** 0 = Internal ROM or RAM 1-8 = DIMM slots 1-8.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
63 SERVICE CYCLE POWER	Indicates that the internal RAM memory test failed.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
64 PRINTER ERROR CYCLE POWER	Indicates a scan buffer error.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
65 PRINTER ERROR CYCLE POWER	Indicates a dynamic RAM controller error.	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
66.X0.YY C-LINK COMM ERROR CHECK CABLES THEN PRESS GO	Indicates an communication error between tray 4 and the printer. **X/YY Description** X = Device number in the link YY = Error code from the optional device	Verify that the communication and power cables are connected. Press Go to continue printing. If the message persists, turn the printer off and on to reset the printer.
66.X1.YY INPUT DEVICE FAILURE CHECK CABLES THEN PRESS GO	Indicates a tray 4 error. **X/YY Description** X = Device number in the link YY = Error code from the optional device	Verify that the communication and power cables are connected. Press Go to continue printing. If the message persists, turn the printer off and on to reset the printer.

Message	Description	Recommended Action
66.X2.YY OUTPUT DEVICE FAILURE CHECK CABLES THEN PRESS GO	Indicates a multi-bin mailbox error. **X/YY Description** X = Device number in the link YY = Error code from the optional device	Verify that the communication and power cables are connected. Press **Go** to continue printing. If the message persists, turn the printer off and on to reset the printer.
67.X PRINTER ERROR POWER CYCLE	Indicates an electronic controller error. **X = Description** 1 = DC Controller Error 2 = DC Controller IC Malfunction 3 = Internal Communication Malfunction	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.
68 NVRAM ERROR SETTINGS CHANGED	Indicates that a recoverable error has been detected in the NVRAM (nonvolatile random-access memory).	Verify the printer control panel settings. One or more fields might have been reset to their factory defaults during the error recovery. For more information on factory defaults, see “Factory Defaults” in chapter 2.
68 NVRAM FULL SETTINGS LOST	Indicates that the NVRAM is full, and the printer is unable to write new data to the NVRAM.	Verify the printer control panel settings. One or more fields might have been reset to their factory defaults during error recovery. The next time the printer is turned off and on, NVRAM will be cleared and all factory defaults will be restored. For more information on factory defaults, see “Factory Defaults” in chapter 2.
79 SERVICE (XXXX) CYCLE POWER	The firmware has detected an unrecoverable error. **X Description** 01XX = IO ASIC Register Error 02XX = Video ASIC Register Error 03XX = IDE ASIC Register Error	Turn the printer off and on to reset the printer. If the condition persists, contact a local authorized HP dealer or service representative for service.

Message	Description	Recommended Action
ACCESS DENIED	A user has attempted to select a menu value while the printer control panel locking is enabled.	See the system administrator for access to the printer control panel.
CALIBRATING	The printer is adjusting the density sensor.	No action is required.
CANCELING JOB	The printer is canceling the current print job.	No action is required.
CLEAN DENSITY SENSOR CYCLE POWER	The density sensor values are out of range or inconsistent. The density sensor might be dirty or the transfer drum might be damaged.	Clean the density sensor. Then turn the printer off and on to reset the printer. If the problem is not resolved, clean the transfer drum. If the condition persists, contact a local authorized HP dealer or service representative for service. For information on cleaning the printer, see “Cleaning the Density Sensor” and “Cleaning the Transfer Drum” in chapter 9.
CLEAR DUPLEX JAM LOWER LEFT DOOR	The printer senses a media jam in the duplexer.	Open the lower left door, remove the jammed media, close the lower left door, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR FUSER JAM LOWER LEFT DOOR	The printer senses a media jam in the fuser area.	Open the lower left door, remove the jammed media, close the lower left door, and wait for the printer to warm up before resuming printing. **WARNING!** Do not touch the fuser; it might be very hot and could cause burns. For more information on clearing jams, see the quick reference guide.

Message	Description	Recommended Action
CLEAR INPUT JAM	The printer senses a media jam in the transfer and registration area or in an input tray.	Open the front door, press the white button on the lower (green) lever, and swing the lever to the right. Open the upper right door, remove the transfer drum, and remove the jammed media from under the metal paper guide. Swing the lower (green) lever to the left, and close the front door. If the message still appears on the control panel display, open the each input tray, remove any jammed media, and close the input tray. Close the printer, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR MAILBOX JAM	The printer senses a media jam in the multi-bin mailbox.	Detach the multi-bin mailbox from the printer, remove the jammed media, reattach the multi-bin mail box, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR OUTPUT JAM UPPER LEFT DOOR	The printer senses a media jam in the top output bin.	Open the upper left door, remove the jammed media, close the upper left door, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR PAPER JAM	The printer senses a media jam.	Open and shut the front door of the printer to clear any paper from the printer. If the message still appears on the printer, check all areas of the printer for jammed media since the printer is unable to determine the location of the media jam. For more information on clearing jams, see the quick reference guide.

Message	Description	Recommended Action
CLEAR TRANSFER JAM	The printer senses a media jam in the transfer drum area.	Open the upper right door, remove the transfer drum, remove the jammed media, reinstall the transfer drum, close the upper right door, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR TRAY 4 JAM	The printer senses a media jam in tray 4.	Open tray 4, remove the jammed media, close tray 4, and wait for the printer to warm up before resuming printing. For more information on clearing jams, see the quick reference guide.
CLEAR UNEXPECTED PAPER SIZE JAM THEN LOAD TRAY 1 <Type> <Size>	The printer senses a media jam in tray 1. <Type> is the media type specified in the printer driver or application. <Size> is the media size specified in the printer driver or application. The <Type> and <Size> can be the default media type and size if an automatic paper override has occurred.	Open tray 1, remove the jammed media, close tray 1, and wait for the printer to warm up before resuming printing. Load the media type and size indicated on the printer control panel. For more information on loading media into tray 1, see “Printing from Tray 1” in chapter 3. For more information on clearing jams, see the quick reference guide.
CLEARING PAPER FROM PRINTER	The printer is attempting to remove unusable media (such as a misfed page or media damaged in a media jam).	No action is required.
CLOSE <Location> DOOR	The printer senses that one of the doors is not closed properly. <Location> is one of the printer doors.	Close the door indicated in the message.
COLD RESET	The printer has recognized the key sequence for performing a cold reset. The printer will reset to the factory default settings.	No action is required. For more information on factory default settings, see “Factory Defaults” in chapter 2.

Message	Description	Recommended Action
CONFIG LANGUAGE	The printer has recognized the key sequence for selecting the display language.	Wait for the display language options to appear and select the appropriate language. For more information on selecting the display language, see "Selecting the Display Language" in chapter 2.
CONTINUOUS TEST PRESS CANCEL JOB	A continuous configuration page is printing.	Press **Cancel Job** to exit the configuration page printout mode. If the printer is in the process of printing when **Cancel Job** is pressed, the printer finishes printing the buffered pages before returning online.
DATA RECEIVED PRESS GO KEY	The printer has received and processed data and is waiting for a form feed.	Press **Go** to form feed a page. The printer will feed the page from one of the input trays.
DISK DEVICE FAILURE	The printer detected a printer hard disk failure.	If access to the printer hard disk is not required, printer operation can continue. Contact a local authorized HP dealer or service representative to replace the printer hard disk.
DISK FILE OPERATION FAILED	The printer has received an illogical PJL command (such as download to non-existent directory).	No action is required.
DISK IS FULL	The printer hard disk is full.	From the host computer, delete data from the printer hard disk using the printer drivers or a disk management application. Or, to clear **all** data from the printer hard disk, reformat the printer hard disk from the printer control panel. To reformat the printer hard disk, press **Menu** until CONFIGURATION MENU appears on the printer control panel display. Press **Item** until INITIALIZE DISK appears on the display. Press **Select** and the printer hard disk will be reformatted.

Message	Description	Recommended Action
DISK IS WRITE PROTECTED	A user has attempted to save to the printer hard disk or send a proof and print job to the printer while the printer hard disk is write-protected.	See the system administrator for access to the printer hard disk.
DRUM ERROR REPLACE DRUM KIT	The printer has detected an error in the imaging drum.	Turn the printer off, and then open the front door. Swing the upper (blue) lever to the right, press the white button on the lower (green) lever, and swing the lever to the right. Remove the imaging drum. Reinstall the drum, swing both of the levers to the left, close the front door, and turn the printer back on. If the problem persists, contact a local authorized HP dealer or service representative for service.
DRUM LIFE LOW REPLACE DRUM KIT	The imaging drum is almost past its specified life.	Although printing can continue, the drum kit should be replaced for optimum printer operation. For more information on replacing the drum kit, see the installation guide included with the drum kit. For more information on configuring the printer response to this message, see “Selecting Toner Low Response” in chapter 2.
DRUM LIFE OUT REPLACE DRUM KIT	The imaging drum is past its specified life.	Printing cannot continue until the drum kit has been replaced. For more information on replacing the drum kit, see the installation guide included with the drum kit.
DUPLEX ERROR CHECK DUPLEXER	The printer has detected an error in the duplexer.	Open the lower left door, press the green tab on the right side of the duplexer, and pull the duplexer out of the printer. Check for and remove any jammed media from the duplexer. Reinstall the duplexer.

Message	Description	Recommended Action
EIO N INITIALIZING	An EIO accessory is initializing. **N = EIO Slot Number** 1 = Bottom EIO Slot 2 = Top EIO Slot	No action is required.
EIO N NOT FUNCTIONAL	Indicates an EIO card error. The error is logged to the event log with more detail. **N = EIO Slot Number** 1 = Bottom EIO Slot 2 = Top EIO Slot	Turn the printer off and on to reset the printer. If the condition persists, replace the offending EIO accessory.
ENGINE TEST	The printer is running an internal test to verify operation. When the printer is finished, the printer returns to the ready state but remains offline.	Press Go to bring the printer online.
FACE UP OUTPUT BIN FULL	The top output bin (face up) on the multi-bin mailbox is full.	Remove all media from the top output bin on the multi-bin mailbox to continue printing.
FUSER LIFE LOW REPLACE KIT	The fuser and paper rollers are almost past their specified life.	Although printing can continue, the fuser should be replaced for optimum printer operation. For more information on replacing the fuser, see the installation guide included with the fuser kit.
FUSER LIFE OUT REPLACE KIT	The fuser and paper rollers are past their specified life.	Replace the fuser kit and reset the fuser counter before attempting to print. For more information on replacing the fuser kit and resetting the counter, see the installation guide included with the fuser kit. For more information on configuring the printer response to this message, see “Selecting Toner Low Response” in chapter 2.

Message	Description	Recommended Action
INCORRECT FUSER LOWER LEFT DOOR	The printer has detected that an incompatible fuser (possibly the wrong voltage of fuser for the printer) has been installed.	Remove the fuser and install the fuser specified for use with this printer. Printing cannot continue until the correct fuser is installed in the printer. For information on ordering a fuser kit, see “Accessories, Options, and Related Products” in chapter 9.
INPUT DEVICE PAPER PATH OPEN	The media transfer door on tray 4 is open.	Close the media transfer door.
INSTALL <Color> TONER	The toner cartridge is either not installed or not correctly installed in the printer. <Color> can be cyan, magenta, yellow, or black.	Insert the cartridge or make sure the installed cartridge is correctly seated in the printer. **Note:** The color toner carousel will not rotate unless the clear door is closed, the imaging drum and black toner cartridge are installed completely (including removing the orange seal from the black toner cartridge and swinging the upper lever to the left), and the upper right door is closed. For more information on installing toner cartridges, see the installation guide included with the toner cartridge.
INSTALL FUSER LOWER LEFT DOOR	The printer has detected that the fuser is not installed.	Install the fuser and verify that it is correctly seated in the printer before attempting to print. For more information on installing the fuser, see the installation guide included with the fuser kit.

Message	Description	Recommended Action
INSTALL IMAGING DRUM OPEN FRONT DOOR	The printer has detected that the imaging drum is not installed.	Install the imaging drum before attempting to print. If the condition persists, take the imaging drum out and reinstall it. **Note:** The imaging drum must be installed and the upper lever must be to the left in order for the color toner carousel to rotate. For more information on installing the imaging drum, see the getting started guide or the installation guide included with the drum kit.
INSTALL TRANSFER DRUM OPEN RIGHT DOOR	The printer has detected that the transfer drum is not installed.	Install the transfer drum before attempting to print. If the condition persists, take the transfer drum out and reinstall it. For more information on installing the transfer drum, see the getting started guide or the installation guide included with the transfer kit.
LANGUAGE = <XXXX>	Displayed during start up. <XXXX> is the printer control panel display language.	No action is required. For more information on changing the printer control panel display language, see “Selecting the Display Language” in chapter 2.
LEFT OUTPUT BIN FULL	The left output bin on the printer is full.	Remove all media from the left output bin of the printer to continue printing.
LOCK TONER LEVER	The blue lever inside the clear door is not locked.	Open the front door of the printer, open the clear door, and swing the blue toner lock lever to the right. Remove the toner cartridge, and then reinstall it, making sure the cartridge is all the way in the printer. Swing the blue toner lock lever to the left until it clicks, and then close the clear and front doors.

Message	Description	Recommended Action
MAILBOX X OUTPUT BIN FULL	A mailbox on the multi-bin mailbox is full. X indicates mailbox 1 through 8.	Remove all media from the mailbox to continue printing.
MAILBOX NOT ATTACHED	The multi-bin mailbox is not correctly attached to the printer.	Push the mailbox up against printer. Verify that the wheels on the multi-bin mailbox are not hitting tray 4 and preventing the multi-bin mailbox from attaching to the printer.
MANUALLY FEED <Type> <Size>	The printer is requesting a sheet of media or envelope to be manually fed. <Type> is the media type specified in the printer driver or application. <Size> is the media size specified in the printer driver or application.	Load the requested media type and size into tray 1. If the proper media size is already loaded into tray 1, press **Go** to initiate printing. For more information on loading media in tray 1, see “Printing from Tray 1” in chapter 3.
MEMORY SHORTAGE PAGE SIMPLIFIED	The printer is compressing the print job so that all of the job will fit into the available printer memory. The print job’s appearance might be altered by the compression of the data.	If possible, simplify the print job by lowering the resolution of graphics. Or, install more printer memory. For more information on printer memory options, see “Accessories, Options, and Related Products” in chapter 9.
NO JOB TO CANCEL	**Cancel Job** was pressed and there is no job to cancel.	No action is required.
NO JOBS PENDING	While in the PROOF AND PRINT MENU, **Item** was pressed and there are no pending proof and print jobs.	No action is required.
OFFLINE	The printer is offline. No error messages are pending.	Press **Go** to bring the printer online.
OUT OF MEMORY JOB CLEARED	The printer personality for the current job could not be run in the available memory. The job was canceled, and no pages were printed.	Reprint the job. If the message still appears, turn the printer off and on to reset the printer before sending the print job again.
PCL MEMORY FULL STORED DATA LOST	The resource save area for the printer personality is full. Fonts downloaded to the printer’s RAM might have been deleted.	Turn the printer off and on to clear the printer’s RAM.

Message	Description	Recommended Action
PJL OPERATIONS FAILED	The requested PJL operation could not be completed because the option is unavailable or the PJL data was corrupt.	No action is required.
PLEASE WAIT	The printer is in the process of going offline or into the menus.	No action is required.
POWERSAVE ON	The printer is in Power Save mode.	Clear this message by pressing any key.
PRESS SELECT IF FUSER IS NEW	The printer has detected that a new fuser has been installed.	If the fuser has been replaced, press **Select** to reset the internal counter. If the fuser has not been replaced, press **Go**.
PRESS SELECT IF TRANSFER IS NEW	The printer has detected that a new transfer drum has been installed.	If the transfer drum has been replaced, press **Select** to reset the internal counter. If the transfer drum has not been replaced, press **Go**.
PRESS SELECT TO INITIALIZE DISK	The printer hard disk is new or has been formatted for another file system.	Press **Select** to reformat the printer hard disk. All data currently on the printer hard disk will be lost. If you don't want to initialize the printer hard disk, turn the printer off and remove the printer hard disk.
PRESS SELECT TO LOSE DISK DATA PRESS GO KEY TO CANCEL	Request to confirm initialization of the printer hard disk.	If you want to proceed with initialization, press **Select**. If you do not want to initialize the printer hard disk, press **Go**.
PRINTER LANGUAGE NOT AVAILABLE JOB CANCELED	PJL encountered a request for a printer personality that does not exist in the printer. The job was canceled and no pages were printed.	No action is required.
PRINTING CONFIGURATION	The printer is printing the configuration page. When the configuration page is printed, the printer returns to an online and ready state.	No action is required.

Message	Description	Recommended Action
PRINTING DEMONSTRATION	The printer is printing a demonstration page. When the demonstration page is printed, the printer returns to an online and ready state.	No action is required.
PRINTING EVENT LOG	The printer is printing the event log page. When the event log page is printed, the printer returns to an online and ready state.	No action is required.
PRINTING FILE DIRECTORY	The printer is printing the file directory page. When the file directory page is printed, the printer returns to an online and ready state.	No action is required.
PRINTING FONT LIST	The printer is printing the font list page. When the font list page is printed, the printer returns to an online and ready state.	No action is required.
PRINTING MENU MAP	The printer is printing the menu map page. When the menu map page is printed, the printer returns to an online and ready state.	No action is required.
PROCESSING COPY X OF Y	The printer is processing a proof and print or mopy print job. X is the number of copies completed. Y is the total number of copies.	No action is required.
PROCESSING JOB	The printer is actively processing a print job.	No action is required.
PROCESSING JOB FROM TRAY X	The printer is actively processing a print job. X is the input tray that the job will be printed from.	No action is required.
PS MEMORY FULL STORED DATA LOST	The resource save area for the printer personality is full. Fonts downloaded to the printer's RAM might have been deleted.	Turn the printer off and on to clear the printer's RAM.

Message	Description	Recommended Action
READY	The printer is online and ready for data. No status or printer attention messages are pending.	No action is required.
RESETTING ACTIVE IO	The printer is resetting active I/O ports.	No action is required.
RESETTING ALL IO	The printer is resetting all I/O ports.	No action is required.
RESTORING FACTORY SETTINGS	The printer is resetting the printer's factory defaults. The printer is in the process of completing a cold reset. When the reset is completed, the printer returns to the ready state but remains offline.	Reset the EIO type and configure the printer before bringing the printer online. For more information on factory defaults and configuring the printer control panel, see chapter 2, "Using the Printer Control Panel."
SEPARATOR OUTPUT BIN FULL	The multi-bin mailbox output bins are full.	Remove all media from the output bins on the multi-bin mailbox to continue printing.
STACKER OUTPUT BIN FULL	The multi-bin mailbox output bins are full.	Remove all media from the output bins on the multi-bin mailbox to continue printing.
TONER LOW REPLACE <Color>	The printer is almost out of the specified toner. The printer remains online. <Color> can be cyan, magenta, yellow, or black.	Although printing can continue, the toner cartridge should be replaced for optimum printer operation. **Do not shake the toner cartridge in attempts to extend the cartridge life.** For more information on replacing the toner cartridge, see the installation guide included with the toner cartridge. For more information on configuring the printer response to this message, see "Selecting Toner Low Response" in chapter 2.
TONER OUT REPLACE <Color>	The printer is out of the specified toner and cannot continue. <Color> can be cyan, magenta, yellow, or black.	Printing cannot continue until the specified toner cartridge has been replaced. For more information on replacing the toner cartridge, see the installation guide included with the toner cartridge.

Message	Description	Recommended Action
TOO MANY FILE STORAGE DEVICES REMOVE EITHER DISK	The printer can only support one printer hard disk at a time.	Turn the printer off and remove either printer hard disk. Printing will not continue until one printer hard disk is removed.
TOP OUTPUT BIN FULL	The top (face-down) output bin of the printer is full.	Remove all media from the top (face-down) output bin on the printer to continue printing.
TRANSFER KIT LOW REPLACE KIT	The transfer drum, transfer belt, cleaning roller, and charcoal filter are almost past their specified life.	Although printing can continue, the transfer kit should be replaced for optimum printer operation. For more information on replacing the transfer kit, see the installation guide included with the transfer kit.
TRANSFER KIT OUT REPLACE KIT	The transfer drum, transfer belt, cleaning roller, and charcoal filter are past their specified life.	Replace the transfer kit and reset the transfer counter before attempting to print. For more information on replacing the transfer kit and resetting the counter, see the installation guide included with the transfer kit. For more information on configuring the printer response to this message, see “Selecting Toner Low Response” in chapter 2.
TRAY 1 CONTAINS UNKNOWN MEDIA	Media was stacked in tray 1 for continuous manual feed printing, and the job has been completed. However, there is still media in the input tray. The printer considers the input tray not to be configured.	Configure the media type for tray 1 or remove the remaining media. For more information on configuring the media type, see “Printing from Tray 1” in chapter 3.

Message	Description	Recommended Action
TRAY 1 LOAD <Type> <Size>	A user has requested a media size that is not currently installed in tray 1. <Type> is the last media type configured for the input tray. <Size> is the last media size configured for the input tray.	Load the media type and size specified on the printer control panel display. After the tray 1 is loaded, the printer automatically brings itself online. If the correct media type and size is loaded in tray 1 and the media does not feed into the printer, verify that the printer control panel settings for tray 1 (Cassette mode) match the media type and size requested. For more information on configuring the printer control panel or checking printer control panel settings, see chapter 2, “Using the Printer Control Panel.”
TRAY 1 SIZE = <Size>	This message is displayed when media is placed in tray 1. <Size> is the last media size configured for the input tray.	Press – Value + to view the choices. Press Select when the choice you want is displayed, and then press Go to bring the printer online. If no key is pressed for 30 seconds after the media is detected in the input tray, the displayed size will automatically be selected, the message will be cleared, and printing will begin.
TRAY X EMPTY <Type> <Size>	An input tray not currently selected has run out of media. X is the input tray number. <Type> is the last media type configured for the input tray. <Size> is the last media size configured for the input tray.	Load the media type and size specified on the printer control panel display. For more information on loading media, see chapter 3, “Common Printing Tasks.”
TRAY X LIFTING	The specified input tray is lifting the media into position for printing. X is the input tray number.	No action is required.

Message	Description	Recommended Action
TRAY X LOAD <Type> <Size> CHECK CONTROL PANEL SETTING	A user has requested a media size that is not currently installed or configured in the printer. This message is also generated when the current input tray runs out of media and no other auto-selectable input trays contain that size of media. X is the input tray number. <Type> is the last media type configured for the input tray. <Size> is the last media size configured for the input tray.	Load the media type and size specified on the printer control panel display, and configure the media type in the printer control panel. After the requested input tray is loaded, the printer automatically goes online. Pressing **Go** will cause the printer to attempt to print the page on the default type and size media. If the condition persists, check the input tray type and size configuration in the printer control panel. The correct media type and size might be loaded in the input tray, but the printer will not recognize that the media is loaded if the printer control panel settings do not match the media type and size requested. For more information on configuring input trays, see “Configuring Media Type and Size” in chapter 2.
TRAY X OPEN	An input tray is open. X is the input tray number.	Close the input tray before resuming printing.
TRAY X TYPE = <Type>	This message is displayed when media is placed in an input tray. X is the input tray number. <Type> is the last media type configured for the input tray.	Press **– Value +** to view the choices. Press **Select** when the choice you want is displayed, and then press **Go** to bring the printer online. If no key is pressed for 30 seconds after the media is detected in the input tray, the displayed type will automatically be selected, the message will be cleared, and printing will begin.
WARMING UP	The fuser is warming up.	No action is required.

Chapter 9

Solving Printer Problems

Performing Basic Troubleshooting Steps

This chapter suggests steps to solve common problems that you might encounter while using the printer. If the printer does not work properly, check the following items first:

- Is the printer connected to a live power source?
- Is the printer online?
- Are the communications cables from the printer to the network or the host computer connected?
- Are the parallel cables IEEE-1284 compliant?
- Are any messages displayed on the printer control panel?
- If you recently replaced a toner cartridge, did you remove the orange tab?
- If you recently replaced the transfer drum, did you remove the cover from the drum?
- Were the printer and its software installed correctly?

For more information on installation and set up, see the getting started guide. If you have questions that you do not find the answers to in this chapter, see the HP service and support information in the front of this manual.

Working with Toner

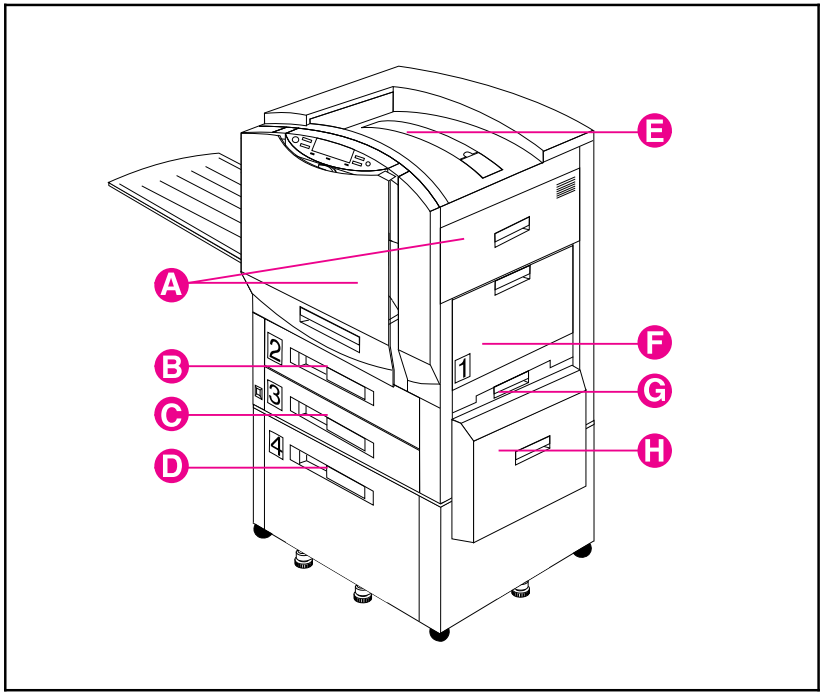
HP recommends that you use HP LaserJet toner cartridges. HP has designed the printer, toner cartridges, and toner formula to work together to give you optimal image quality from the printer.

If toner gets on clothing or carpet, wipe the toner off with a dry cloth and then wash with cold water. Warm water or the heat of a dryer will set the toner into the clothing or carpet.

Media Jam Locations

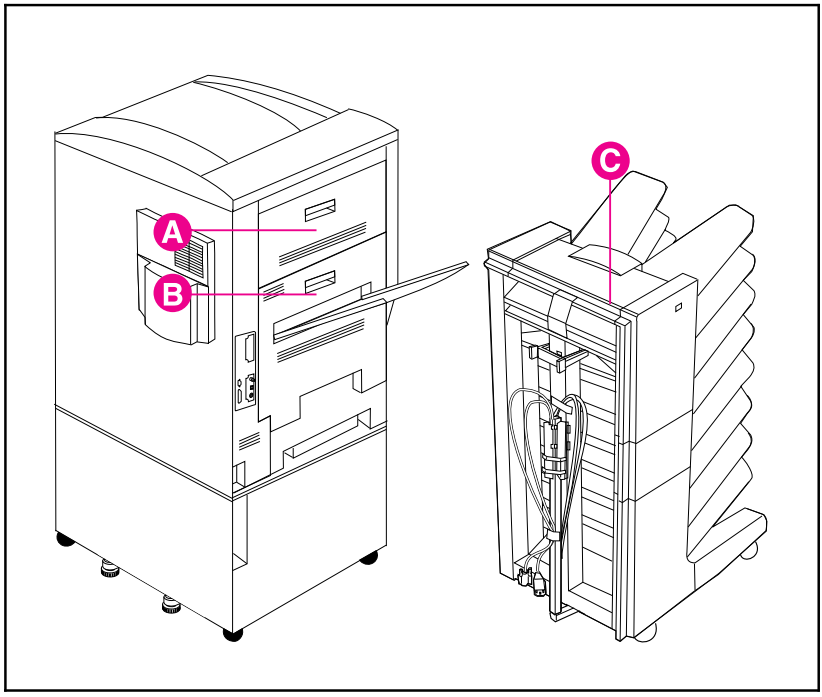
The following figure shows the locations of media jams in the printer paper path.

Figure 17



A Registration and Transfer Area
B Tray 2
C Tray 3
D Tray 4 (optional)
E Top Output Bin (face down)
F Tray 1
G Lower Right Door
H Media Transfer Door (part of tray 4)

Figure 18



A Upper Left Door
B Fuser and Duplexer (optional) area
C Multi-bin Mailbox (optional)

For information on clearing jams, see the quick reference guide.

Media Handling Problems

Problem	Cause and Solution
Media jams	The media does not meet the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	The paper or other media is in poor condition. Replace the media.
	The media was not stored correctly. Replace the media. Media should be stored in its original packaging in a dry area.
	The media type is set incorrectly. Select the correct media type in the printer control panel. For more information, see chapter 2, “Using the Printer Control Panel.”
	You are using media that has already passed through the printer or a copier. Do not re-feed media.
	The input tray is loaded incorrectly. Remove any excess media from the input tray. Press the media down under the tabs in the input tray. For more information on loading media, see chapter 3, “Common Printing Tasks.”
	The media guides are not adjusted correctly. Adjust the media guides so that they are firmly against the media but not bending the media.
	If you are printing on heavy media and the media is jamming repeatedly in the top output bin, switch to the left output bin.
	If you are printing from tray 1 and the size set in your application does not match the size of media fed into tray 1, the printer will sense the difference in size and stop printing to prevent damage to the printer. Remove any remaining media, ensure the size set in your application and the size of the media match, and reprint.
	Print media is binding or sticking together. Remove any remaining media, rotate it 180 degrees or flip it over, and then set it back in the input tray.
	If you are using the optional multi-bin mailbox, do not remove pages from the output bins until the printer is finished printing.
	Repeated jams in the fuser area might indicate that the fuser is not installed correctly. Press down on the large green lever on the left side to lock it into place. Also, rotate the blue levers on either side of the fuser up until they snap into place.

Problem	Cause and Solution
(Media jams, continued)	Repeated jams in the transfer area might indicate that the transfer drum is not installed correctly. Remove the transfer drum and reinstall it, making sure the knobs on the sides of the transfer drum are in the guides inside the printer.
	Repeated jams in the multi-bin mailbox area might indicate that the printer and multi-bin mailbox are set up on an uneven floor. Remove the toner cartridges, and then move the printer to a level location. Reinstall the toner cartridges.
	The printer consumables are wearing out. Check the printer control panel for messages prompting you to replace consumables, or print a configuration page to verify the current status of the consumables. For the consumable replacement schedule, see “Frequency for Replacing Printer Consumables” in chapter 7.
Printer feeds multiple sheets	The input tray is overfilled. Remove the excess media from the input tray. For more information on input tray capacity, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	Verify that the media is under the tabs in the input tray. Pull out the input tray, press the media down under the tabs in the input tray, and then close the input tray.
	The media is sticking together. Remove any remaining media, rotate it 180 degrees or flip it over, and then set it back in the input tray.
	There is more than one type of media, such as paper and transparencies, in the input tray. Remove all media except the type you want to print on.
	The media does not meet the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
Printer feeds the incorrect media type or size	The correct media size is not selected in your application. Select the correct media size in your application.
	The media types for each input tray are not configured correctly in the printer control panel. Verify the requested media is installed in the printer, and reconfigure the media type for the input tray in the printer control panel. For information on configuring the media type in the input trays, see “Configuring Media Type and Size” in chapter 2.

Problem	Cause and Solution
(Printer feeds the incorrect media type or size, continued)	If the requested media type and size are not available, then the printer displays a message on the printer control panel requesting that the media type and size be loaded. If Auto Paper Override is enabled in the printer control panel, then after the set time, or if Go is pressed, the printer will print on the default type and size.
Media does not feed automatically	**Manual Feed (Tray 1)** is not selected in the printer driver. Select the correct media source.
	The input tray is empty. Load media into the input tray.
	Media is still in the paper path after removing the previous media jam. Open the printer doors and remove any media from the paper path. Check the fuser area carefully for any jams. For information on removing media jams, see the quick reference guide.
Media does not feed from tray 1	**Manual Feed (Tray 1)** is not selected in the printer driver. Select the correct media source.
	If the size set in your application does not match the size of media fed into tray 1, the printer will sense the difference in size and stop printing to prevent damage to the printer. Remove any remaining media, verify the size set in your application and the size of the media match, adjust the media width guides so they are firmly against the edges of the media, and reprint.
	If TRAY 1 MODE = CASSETTE is selected on the printer control panel, make sure that you select tray 1 as the source in the printer driver or application. Configure the correct media type and size for tray 1 in the printer control panel. For information on configuring the media type and size, see “Configuring Media Type and Size” in chapter 2.
	Verify that the media is being inserted far enough into the tray 1. Insert the media into the tray 1 until the media is tight against the printer, and slide the media width guides until they touch both sides of the media without bending the media.
	Media is still in the paper path after removing the previous media jam. Open the printer doors and remove any media from the paper path. For information on removing media jams, see the quick reference guide.
Media does not feed from tray 2 or 3	The media type selected from the application has not been configured for the input tray. Configure the media type for the input tray in the printer control panel. For more information on configuring media types, see “Configuring Media Type and Size” in chapter 2.

Problem	Cause and Solution
(Media does not feed from tray 2 or 3, continued)	If trays 2 and 3 are configured for the same media type and size, the printer will only feed from a specific input tray if that input tray is selected in your application. For more information on selecting a input tray from your application, see the online help for the application.
	Media is still in the paper path after removing the previous media jam. Open the printer doors and remove any media from the paper path. For information on removing media jams, see the quick reference guide.
Media does not feed from tray 4	Remove the media and verify the media guides in the front, back, and left of the input tray are configured to the correct media size. For more information on configuring the media guides, see “Printing from the Optional Tray 4” in chapter 3.
	Verify the media type configured in the printer control panel for tray 4 matches the media loaded in tray 4. For more information on configuring the media type, see “Configuring Media Type and Size” in chapter 2.
	The input tray is overfilled. Remove excess media from the input tray. For more information on input tray capacity, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	The power cord is not firmly plugged into the printer, tray 4, and the power receptacle. Remove and reconnect the power cord.
	Verify that the cables are firmly attached between tray 4 and the printer. Also, verify that the cables are connected to the correct connector. For more information on connecting the cables between tray 4 and the printer, see the getting started guide.
	The paper rollers might need to be cleaned. Open the lower right door, pinch together the release levers on the end of the rollers, and slide the rollers off their spindles. Clean the rollers with a hand wipe. Reinstall the rollers by holding the roller by the levers and sliding the rollers onto the spindle until the rollers click into place.
	The media does not meet the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
Transparencies or glossy paper will not feed from trays 1, 2, or 3	Verify the correct media type is selected in the printer driver or application. Or, if you are trying to print from a particular input tray, verify that the input tray from which you are trying to print is selected in the printer driver or application.

Problem	Cause and Solution
(Transparencies or glossy paper will not feed from trays 1, 2, or 3, continued)	Verify the media type configured in the printer control panel for the input tray matches the media loaded in the input tray. For more information on configuring the media type, see "Configuring Media Type and Size" in chapter 2.
	The input tray is overfilled. Remove the excess media from the input tray. For more information on input tray capacity, see "Supported Media Weights and Sizes for Input Trays" in chapter 3.
	Verify that the media is being inserted far enough into the tray 1. Insert the media into the tray 1 until the media is tight against the printer, and slide the media width guides until they touch both sides of the media without bending the media.
	Only one sheet is loaded in the input tray. Load more than one sheet in the input tray.
	The media does not meet the specifications for this printer. For media specifications, see "Supported Media Weights and Sizes for Input Trays" in chapter 3.
Envelopes jam or will not feed in the printer	Envelopes can only be printed from tray 1. If the envelopes are in another input tray, remove the envelopes and place them in tray 1.
	Verify tray 1 is configured for Cassette mode, and the media type and size is correctly configured in the printer control panel. For more information on configuring the media type and size, see "Configuring Media Type and Size" in chapter 2. For more information on configuring the mode for tray 1, see "Selecting the Mode for Tray 1" in chapter 2.
	Envelopes can only be printed on the front (smooth) side. If the envelopes are loaded upside-down in tray 1, remove the envelopes and place them flap down on tray 1 with the return address area (short edge of the envelope) toward the printer.
	Verify that the envelopes are being inserted far enough into the tray 1. Insert the envelopes into the tray 1 until the envelopes are tight against the printer, and slide the media width guides until they touch both sides of the envelopes without bending the envelopes.
	The envelope does not meet the specifications for this printer. For envelope specifications, see "Supported Media Weights and Sizes for Input Trays" in chapter 3.
Media is not going to the correct output bin	Verify that the correct output bin is selected in the printer driver. For more information on changing printer driver settings, see the online help.

Problem	Cause and Solution
(Media is not going to the correct output bin, continued)	The media does not meet the specifications for the output bin. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	If you are trying to send print jobs to an optional multi-bin mailbox, verify that the multi-bin mailbox has been installed on the printer and in the printer driver. Also verify the multi-bin mailbox mode, which will affect the print job destination.
Curled or wrinkled output	The media does not meet the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	The current media is damaged or in poor condition. Remove the damaged media from the input tray, and then replace with undamaged media.
	You are operating the printer in excessively humid conditions. Make sure the printer is operating within the environmental specifications listed in appendix D, “Specifications.”
	If you are printing heavy, solid fill areas, the excessive toner can cause excessive curl. Try printing different halftone patterns (a lighter shade of the same color), a lighter color, or a lighter pattern.
	The paper path might be curling the page. Change the paper path by printing from a different input tray to a different output bin.
	You are using media that was not stored correctly and could have absorbed water. Remove and replace with media from a fresh, unopened package.
	The media has a poorly cut edge. Remove any remaining media, rotate the media 180 degrees or flip it over, and then set it back in the input tray.

Printer Response Problems

Problem	Cause and Solution
No display message	The printer might be in Power Save mode. Press Go to bring the printer online.
	The printer control panel display appears blank or is not lit, even when the fan is running. The printer is in standby mode (off). Turn the printer on (button in).
	The power cord is not firmly plugged into both the printer and the power receptacle. Remove and reconnect the power cord.
	The line voltage is incorrect for the printer power configuration. Connect the printer to the correct line voltage as specified on the Power Rating label on the back of the printer.
	The power cord is damaged or excessively worn. Replace the power cord.
	The power source receptacle is not working correctly. Connect the printer to a different power receptacle.
	If you recently installed DIMMs or a printer hard disk, verify the communications board was reinstalled correctly. For more information on installing DIMMs, see appendix A, “DIMM Installation;” for more information on installing a printer hard disk, see the installation guide included with the printer hard disk.
Tray 4 will not power on	The power cord is not firmly plugged into both the printer and the power receptacle. Remove and reconnect the power cord.
	Verify that the cables are firmly attached between tray 4 and the printer. Also, verify that the cables are connected to the correct connector. For more information on connecting the cables between tray 4 and the printer, see the getting started guide.
The multi-bin mailbox will not power on	Verify that the power cord is firmly plugged into both the multi-bin mailbox and the power receptacle. Remove and reconnect the power cord.
	Verify that the cables are firmly attached between the multi-bin mailbox and tray 4. Also, verify that the cables are connected to the correct connector. For more information on connecting the cables between the multi-bin mailbox and tray 4, see the getting started guide.
	Verify that the multi-bin mailbox is firmly attached to the printer.

Problem	Cause and Solution
The printer does not recognize the multi-bin mailbox	Verify that the power cord is firmly plugged into both the multi-bin mailbox and the power receptacle. Remove and reconnect the power cord.
	Verify that the multi-bin mailbox is firmly attached to the printer.
	Verify that the cables are firmly attached between the multi-bin mailbox and tray 4. Also, verify that the cables are connected to the correct connector. For more information on connecting the cables between the multi-bin mailbox and tray 4, see the getting started guide.
Color toner carousel will not rotate	The power cord is not firmly plugged into both the printer and the power receptacle. Remove and reconnect the power cord.
	Verify the clear door is closed, the imaging drum and black toner cartridge are installed (including removing the orange seal from the black toner cartridge and swinging the upper lever to the left), and the upper right door is closed.
The printer is on, but not receiving data (Data light does not blink and nothing prints)	READY is not displayed on the printer control panel. Press Go to bring the printer online.
	The network cable is not correct for the network operating system. Select the correct network cable for the network operating system. For more information, see the getting started guide.
	The interface cable is not securely connected to both the printer and the computer. Remove and reconnect the interface cable.
	The network cable might be old or not working correctly. Replace the network cable with a new cable.
	The parallel cable might not be working correctly. Verify that the cable is IEEE-1284 compliant and no longer than 10 feet (approximately 3 meters), and that the parallel advanced function in the printer control panel is on. If necessary, turn the parallel advanced function off through the printer control panel and replace the cable.
	The network configurations on the configuration page do not match the configurations on the host computer. Configure the printer to match the computer configuration, or configure the host computer to match the printer. For network configuration information, see the getting started guide and “Configuring the Printer for a Network” in chapter 2.
	If you have more than one LAN (local area network), the computer might be on a different LAN than the printer is on. Change LANs and reprint the job.

Problem	Cause and Solution
(The printer is on, but not receiving data, continued)	If you are using Windows 95 or Windows NT, the host computer or the printer might not be shared correctly. For more information on sharing, see the Windows documentation.
	If you are using Novell NetWare, you might not have configured the queues properly. Use the HP JetAdmin software to configure the queues. For more information on configuring queues, see the HP JetAdmin online help.
	The computer port is not configured or working correctly. Connect another peripheral to this port to check the port operation.
	If you are using AppleTalk, the printer is not selected in the Chooser menu. Go to the Chooser menu. Select the printer type. In the list box, select the printer name. Select the printer port icon. When you close the Chooser menu, the settings will be saved.
	If you are using AppleTalk, verify that the AppleTalk name matches the name on the configuration page. Print the configuration page. Go to the Chooser menu. Select the printer type. In the list box, select the printer name that matches the printer name on the configuration page. Select the printer port icon. When you close the Chooser menu, the settings will be saved.
The printer is on and receiving data (Data light blinks), but nothing prints	READY is not displayed on the printer control panel. Press **Go** to bring the printer online.
	The levers inside the front door of the printer might not be latched. Verify all levers inside the front door are properly latched and close the front door.
	The Data indicator is flashing. Wait for the Data indicator to stop flashing. The printer is still receiving data.
	The printer might be out of toner. Check the printer control panel display for TONER OUT REPLACE <Color>. For more information on replacing the toner cartridge, see the installation guide included with the toner cartridge.
	The imaging drum life might be exceeded. Check the printer control panel display for DRUM LIFE OUT REPLACE DRUM KIT. For more information on replacing the drum kit, see the installation guide included with the drum kit.
	Check the printer control panel for messages. For more information on resolving printer control panel messages, see chapter 8, “Printer Control Panel Messages.”

Problem	Cause and Solution
(The printer is on and receiving data, but nothing prints, continued)	The parallel port might have an MS-DOS timeout error. Add a MODE command to the autoexec.bat file. For example, in MS-DOS 4.0 or later, use `MODE LPT1: B`. For earlier versions of MS-DOS, use `MODE LPT1: P`. Both examples are for a printer connected to LPT1. See the MS-DOS documentation for more information.
The printer is on, but cannot print a PostScript file	You are using the MS-DOS copy command with the /B option (`COPY /B <filename>PRN:` or `COPY <filename>PRN: /B`). Try the same command without the /B option.
	The PostScript printer driver is not selected in your application. Select the PostScript printer driver for this printer in your application.
	The PostScript file might contain an error. Turn the PRINT PS ERRORS option on in the printer control panel to determine the error. Try printing the PostScript file from another application. If necessary, update the PostScript printer driver. For more help, see the Adobe documentation.
Cannot select the printer from the computer	READY is not displayed on the printer control panel. Press **Go** to bring the printer online.
	The correct printer driver is not loaded in the computer. Load the correct printer driver.
	The correct printer and port are not selected on the computer. See the getting started guide to verify that the printer is connected to the network correctly, and then select the correct printer and port.
	Print a configuration page to verify that the TCP/IP address in the EIO settings and the printer name matches the information in the network settings on the host computer. Change the settings as necessary.
	Verify that the network permissions have been set correctly. For more information on network permissions, see the network operating system documentation.
	If you are on an AppleTalk network or using a Mac OS computer, the printer is not selected correctly. Go to the Chooser menu. Select the printer type. In the list box, select the printer name. Select the printer port icon. When you close the Chooser menu, the settings will be saved.

Printer Control Panel and Configuration Problems

Problem	Cause and Solution
Printer control panel settings work incorrectly	The printer control panel display appears blank or is not lit even when the fan is running. The printer is in standby mode (off). Turn the printer on (button in).
	The printer settings in the application are different from the printer control panel settings. The settings in your application override the settings in the printer control panel.
	The settings were not correctly saved after changing them. Re-select the setting, then press **Select**. An asterisk (*) should appear to the right of the setting.
	The data indicator was lit and the settings were not activated after changing them. Re-select the printer control panel settings. Then, if the data indicator is lit, press **Select** to activate the settings and clear the print buffer.
	The Data indicator is lit. Buffered data exist in the printer. Pressing **Select** activates the printer control panel settings, but erases the buffered data. Pressing **Go** prints the buffered data in the current printer control panel settings, then activates the new printer control panel settings.
	If you are on a network, another user might have changed the printer control panel settings. See the system administrator to coordinate changes to printer control panel settings.
Cannot select the information menu	The Ready indicator is lit. Press **Go** to take the printer offline.
	The Data indicator is lit. Press **Go** to reset the printer.
Cannot print a configuration page	You did not press **Select** after selecting the configuration page. Re-select the configuration page. Then press **Select** to print the configuration page.
	You pressed **Go** before pressing **Select** or before the printer self-test was completed. Re-select the configuration page, and then press **Select** once to print the configuration page. Pressing **Go** after the printer self-test is started, or before pressing **Select**, stops the printer self-test and brings the printer online.
	The selected input tray is empty. Load the correct media size in the input tray.

Application Problems

Problem	Cause and Solution
Cannot change system selections through software	The correct printer driver is not loaded. Load the correct printer driver.
Cannot select a font in the application	The correct printer driver is not selected. Select the correct printer driver.
	The font is not available in your application. Use the HP FontSmart utility to add the font for a Windows application. For other operating systems, use the font manager utility to add the font.
	If you have downloaded a font on the printer hard disk and you do not see the font in the application, see the download program (such as the HP FontSmart utility or EuroForm) help for more information.
	Print a disk directory page to see if the font has been downloaded to the printer hard disk. If the font is on the printer hard disk, install the font in Windows using the HP FontSmart utility or through the Windows control panel. For more information on installing a font using the HP FontSmart utility or the Windows control panel, see the appropriate online help.
	The font might have been downloaded to the printer RAM rather than to the printer hard disk. When the printer is turned off and on, all data in the printer's RAM is lost. Download the font to RAM again. For more information on downloading fonts, see the online help.
	If you selected one font and another font prints out, the font is not available and the application has substituted the font. Make sure the selected font has been downloaded to the printer hard disk or printer RAM. For more information on downloading fonts, see the online help.
Cannot select colors in the application	Your application does not support color. See the documentation for your application for help.
	The color mode is not selected in your application. Select the color mode instead of the grayscale or black and white output mode.
	The correct printer driver is not loaded. Load the correct printer driver.

Incorrect Printer Output

Problem	Cause and Solution
Incorrect fonts on the printout	The font has not been correctly selected in your application. Re-select the font in your application. For more information on selecting fonts, see the online help for your application.
	The font is not available to the printer. Use a different font or download the font you want. For more information on downloading fonts, see the online help for the printer driver.
	The correct printer driver is not selected. Select the correct printer driver. For more information on selecting printer drivers, see the online help for the printer driver for your application.
Cannot print all characters in a symbol set	The correct font is not selected. Select the correct font. For more information on selecting fonts, see the online help for your application.
	The correct symbol set is not selected. Select the correct symbol set. For more information on selecting symbol sets, see the online help for your application.
	The selected character is not supported by your application. For more information, see the online help for your application.
	The selected symbol set is not supported by the printer. Use a font that supports the symbol set or download fonts that support the symbol set. For more information on downloading fonts, see the online help.
Erratic or interrupted printout	The interface cable is loose. Remove and reconnect the interface cable.
	The interface cable is damaged or bad. Connect a new IEEE-1284 compliant interface cable.
	The power cable is loose. Remove the cables, and then firmly plug the power cord into both the printer and the power receptacle.
Partial printout	The media was loaded in tray 1 incorrectly. Load letter- or A4-sized media with the long edge toward the printer. Load media sizes larger than letter or A4 with the short edge toward the printer.
	Verify that the media size set in the printer driver and the actual size of the media match. For information on configuring the printer driver, see the online help.

Problem	Cause and Solution
(Partial printout, continued)	A memory error message appears on the printer control panel display. Delete from the printer memory any unwanted downloaded fonts, style sheets, macros, and forms, or add more memory to the printer.
	If there are missing random characters, the parallel cable might be old or bad. Replace the cable with an IEEE-1284 compliant parallel cable.
	The printer files contain errors. Check your application to make sure the print files are error free by 1) trying to print another file that you know is error free from within the same application or 2) printing the file in question from another application.
Drifting text between consecutive pages	Your application is not resetting the printer to the top of the page. See the software application notes or the *PCL Technical Reference Manual* for specific information.
PostScript job prints as text	If you are using a non-Windows or custom-built application, it is possible that the PostScript job header is not being sent down to the printer with the file. For more information about sending a PostScript job header with your file, see the application's documentation.
	Your file might have an error in the PostScript code. Try reprinting the document. For more information on printing PostScript files, see the application's documentation.

Color Printing Problems

Problem	Cause and Solution
Printed colors do not match the screen colors	The computer and printer use different color processing methods. Other factors, such as print media and lighting, also influence and limit your ability to match colors from the screen to your output. For more information on printer driver color controls, see chapter 4, “Using Color.”
	Turn the printer off and on to reset the printer’s color calibration. If the problem persists, clean the density sensor as described in “Cleaning the Density Sensor” later in this chapter.
	Extremely light screen colors are not being printed. Avoid extremely light colors. Your application is interpreting extremely light colors as white. For more information, see the online help for your application.
	Extremely dark screen colors are being printed as black. Avoid extremely dark colors. Your application is interpreting extremely dark colors as black. For more information, see the online help for your application.
	The screen colors differ from the printer output. Select **ColorSmart II** in the Color tab of the printer driver. For information on using the Color Swatch utility to help match colors or another color matching system, see “Selecting Colors” in chapter 4 or see the online help.
	Each application processes colors differently. Change applications. For more information on how a particular application handles color, see the documentation for the application.
	The color density and balance are not set properly. For information on changing the color density and balance, see “Adjusting the Color Balance” in chapter 4.
Missing colors	Turn the printer off and on to reset the printer’s color calibration.
	The media does not meet the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	You might be operating the printer in excessively humid conditions. Make sure the printer is operating within the environmental specifications listed in appendix D, “Specifications.”

Problem	Cause and Solution
(Missing colors, continued)	A new toner cartridge was installed without removing all of the toner packaging. Remove the toner cartridge. Remove all packaging, verify that the orange tab has been pulled and the seal has been removed. Reinstall the toner cartridge.
	The printer might not be recognizing that the toner levels are low. Open the front door, and remove and reinstall each toner cartridge. Close the front door. Replace the toner cartridges if TONER LOW REPLACE <Color> or TONER OUT REPLACE <Color> appears on the printer control panel display.
Print is black instead of color	The color mode is not selected in your application or printer driver. Select the color mode instead of the grayscale or black and white mode in your application or printer driver. For more information, see the online help for the application or printer driver.
	The correct printer driver is not selected in your application. Select the printer driver for this printer. For more information, see the online help for the printer driver.
	The printer is not working correctly. Verify the printer operation by printing a configuration page from the printer control panel. If no color appears on the configuration page, contact a local authorized HP dealer for service.
Inconsistent colors after replacing the toner cartridges	You are not using the correct toner cartridges. Use only the HP toner cartridges that were designed for this printer. HP has designed the printer, toner cartridges, and toner formula to work together to give you optimal image quality from the printer. For part number information, see “Accessories, Options, and Related Products” later in this chapter.
	A new toner cartridge was installed without removing all of the toner packaging. Remove the toner cartridge. Remove all packaging, verify that the orange tab has been pulled and the seal has been removed. Reinstall the toner cartridge.

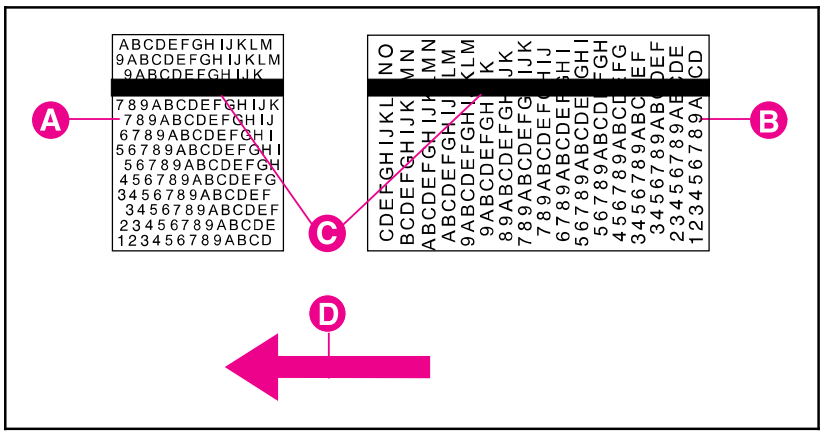
Print Quality Problems

Unless otherwise specified, all references in this section to horizontal or vertical directions of print quality problems refer to problems found on letter- and A4-sized media. These media sizes are fed into the printer long edge first.

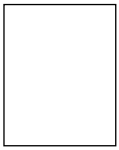
Because media sizes other than letter or A4 are fed into the printer short edge first, the orientations of print quality problems are the opposite of those on letter or A4-sized media. Print quality problems that appear horizontally on a letter- or A4-sized page when it is held with the short edge up will run vertically on other media sizes when the page is held with the short edge up. The same is true for a vertical defect on a letter- or A4- sized page: it will appear as a horizontal defect on other sizes of media.

The following figure shows a print quality problem printed on both a letter- or A4-sized page and the same defect on an 11-by-17 inch or A3-sized page (or any other size of media).

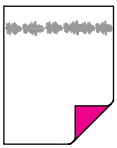
Figure 19



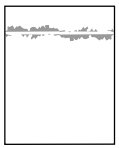
A Letter- or A4-sized media
B 11-by-17 inch or A3-sized media (or any other size of media)
C Print quality problem
D Direction media moves through printer

Problem	Cause and Solution
Blank page 	If you recently replaced the transfer drum, you might not have removed the protective cover from the drum's surface. Remove the protective cover as described in the transfer kit installation guide.
Toner smear 	Toner smears appear on the back of the page. The transfer belt is dirty. Open and close the front door to complete a printer self-cleaning cycle.
	There might be an undetected jam in the printer. Open and close the front door to allow the printer to clear the jam. If the problem persists, remove the transfer drum. Look between the drum surface and the drum handles for the piece of media. Remove any media, and then reinstall the transfer drum.
	You recently had a media jam or the printer fed multiple sheets of media. Open and close the front door to complete a printer self-cleaning cycle.
	If you are printing on media heavier than 28 lb (105 g/m²) bond, you must select **Heavy Paper** as the paper type on the Paper tab in the printer driver to ensure the correct finish on the media. For more information on changing the printer driver settings, see the online help.
Horizontal lines or streaks  	A toner cartridge might be running out of toner. Check the printer control panel display for a TONER LOW REPLACE <Color> or TONER OUT REPLACE<Color> message. Replace the toner cartridge indicated on the printer control panel display. **Do not shake the toner cartridge in attempts to extend the cartridge life.** For more information on replacing the toner cartridge, see the installation guide included with the toner cartridge.
	Dark or light lines or streaks appear in colors, except black. A toner cartridge might be defective. To determine which toner cartridge is defective, see "Troubleshooting with Print Quality Test Pages" later in this chapter. If the problem persists, contact a local authorized HP dealer or service representative for service.
	White lines or streaks only appear in the black areas of print, but not in color areas. Print the configuration page five times. The defect should clear with continued printing. Then reprint the print job. If the problem persists, replace the black toner cartridge. If the problem persists, contact a local authorized HP dealer or service representative for service.

Problem	Cause and Solution
(Horizontal lines or streaks, continued)	Dark or white lines or streaks in all colors, including black. Print the configuration page five times. The defect should clear with continued printing. If the defect does not clear, turn the printer off and on to reset the printer's density calibration. If the problem persists, replace the imaging drum. For more information on replacing the imaging drum, see the installation guide included with the drum kit.
	Light streaks in dark solid fill areas might indicate that the post charger on the transfer drum needs to be cleaned. Open and close the front door to complete a printer self-cleaning cycle. If the defect does not clear, clean the post charger. For information on cleaning the post charger, see "Cleaning the Post Charger" later in this chapter.
Vertical bands or very dark background 	Vertical colored bands or dark black or brown backgrounds appear on the page. If the problem persists after printing 10 pages, contact a local authorized HP dealer or service representative for service.
	The new imaging drum might have a temporary charging problem. Print several configuration pages to clear the drum.
Faded print, or random faded areas 	A toner cartridge is running out of toner. Check for a TONER LOW REPLACE <Color> or TONER OUT REPLACE <Color> message on the printer control panel. Replace the toner cartridge indicated on the display.
	The media does not meet the specifications for this printer. For media specifications, see "Supported Media Weights and Sizes for Input Trays" in chapter 3.
	The moisture content of the media is uneven or too high. Try media from a different source or from an unopened ream of media.
	If you are trying to duplex on paper heavier than 28 lb (105 g/m²) bond, at your computer select **Heavy** or **Cardstock** as the media type in the printer driver. Print side one of your document from tray 1. To print side two, at your computer select **Manually Print on 2nd Side** in the printer driver. Then, using tray 1 again, turn the page over and print. **Note:** If you use the **Manually Print on 2nd Side** setting when you are not printing on the second side of heavy media, you might see sharp, inconsistent patches of color on your output.
	Some areas of some media might reject toner. Try media from a different source or from an unopened ream of media.

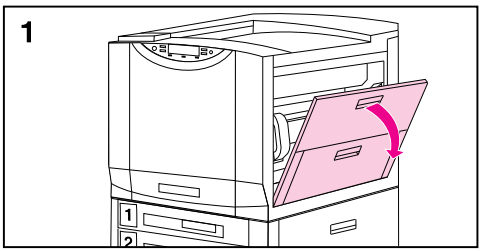
Problem	Cause and Solution
(Faded print, or random faded areas, continued)	Your media is excessively rough. Change to a smooth xerographic paper. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	The letterhead you are using is printed on rough paper. Try a smooth xerographic paper. If this solves the problem, make sure the letterhead vendor is using paper that meets the specifications for this printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	You are operating the printer in excessively humid or dry conditions. Make sure the printer is operating within the environmental specifications listed appendix D, “Specifications.”
	The media was creased or wrinkled when it was loaded in the input tray. Try media from a different source or from an unopened ream of media.
	If you recently removed the imaging drum from the printer, it might have been damaged by light. Turn the printer off and on to reset the printer’s density calibration. If the problem persists, replace the imaging drum or contact a local authorized HP dealer or service representative for service. For more information on replacing the imaging drum, see the installation guide included with the drum kit.
	If the print or the background is too dark, turn the printer off and on to allow the printer to adjust its color settings. If the problem persists, clean the density sensor as described in “Cleaning the Density Sensor” later in this chapter.
Irregular, raised spots or stray toner 	If you are printing on heavy media (28 to 58 lb, or 105 to 216 g/m² bond), you must select **Heavy Paper** as the paper type in the Paper tab in the printer driver to ensure the correct finish on the media. For more information on changing printer driver settings, see the online help.
	Toner is smudged on the back of the page. Toner collected on the transfer belt will cause smudging on the back of a page. The belt is self-cleaning and the smudging will normally clear within a few pages. Or, open and close the front door to complete a printer self-cleaning cycle.
	You recently had a media jam or the printer fed multiple sheets of media. Open and close the front door to complete a printer self-cleaning cycle.
	You are refeeding media that has already passed through the printer or through a copier. Do not refeed media. Refeeding media contaminates the fuser, causing stray toner defects.

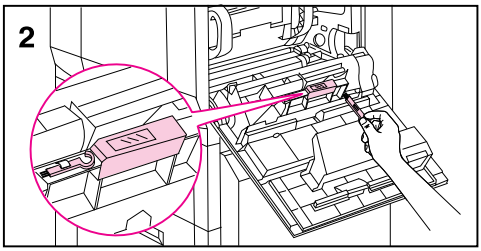
Problem	Cause and Solution
(Irregular, raised spots or stray toner, continued)	The fuser roller is contaminated. Print 5 to 10 pages to clean the fuser roller.
Banding 	Consumables might be past their rated life. Check the printer control panel display for any messages. If no messages appear, print a configuration page to check the life of the consumables. Replace any consumables that are past their rated life.
	Certain halftone patterns (lighter shades of a solid color) exaggerate banding. Try a different halftone pattern.
Dull or dark colors on transparencies  	The printer is not correctly fusing the toner to the transparency. Check **Transparency** in Paper tab in the printer driver. For more information on changing the printer driver settings, see the online help.
	The media input tray is not correctly configured for transparencies. For more information on configuring the input tray, see “Configuring Media Type and Size” in chapter 2.
	Transparency is not selected as the media type on the Paper tab in the printer driver. When **Transparency** is selected as the media type and **ColorSmart II** is selected on the Color tab, the printer will use a color treatment optimized for projection. To choose different color treatments for transparencies, use the **Manual** setting on the Color tab. For more information on using color, see chapter 4, “Using Color.”
	Turn the printer off and on to reset the printer’s density calibration.
	Reflective overhead projectors reflect light through the transparency twice, causing excessive light scattering and producing colors that appear dark or dull on the screen. If you are using a reflective overhead projector (usually a portable overhead projector), use a standard overhead projector, if available.
	You are using a transparency that is outside the specifications for this printer. Use HP brand transparencies to produce the best image quality for the printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	The selected colors give an undesirable appearance when printed. Select different colors in your application.

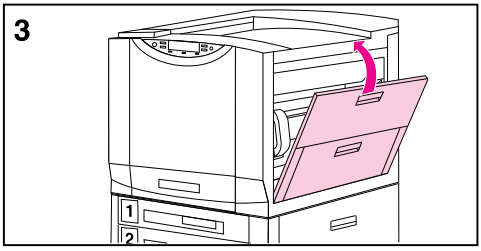
Problem	Cause and Solution
(Dull or dark colors on transparencies, continued)	Spots and smudges appear in the background areas of transparencies when they are projected on the screen. Reprint the transparencies, being careful not to touch the surface of transparencies. Oil from your fingers and hands can contaminate transparencies, leaving oil spots or smudges on the transparencies.
	Verify that the printer is operating in an environment consistent with the specifications listed appendix D, “Specifications.”
Rippled or wavy transparencies 	You are using a transparency that is outside the specifications for this printer. Use HP brand transparencies to produce the best image quality for the printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	There is a wave or ripple in the background when printing a solid color. Choose a background pattern that uses less toner.
	The paper path you are using might be rippling or waving the page. Change the paper path by printing from a different input tray to a different output bin.
Horizontal streaks on transparencies 	You are using a transparency that is outside the specifications for this printer. Use HP brand transparencies to produce the best image quality for the printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
	Reflective overhead projectors reflect light through the transparency twice, causing excessive light scattering and producing colors that appear dark or dull on the screen. If you are using a reflective overhead projector (usually a portable overhead projector), use a standard overhead projector, if available.
Smudges 	The printer recently had a media jam. Open and close the front door to complete a printer self-cleaning cycle.
	You recently changed to a different media size. Open and close the front door to complete a printer self-cleaning cycle.
	If the previous page printed was a prepunched media and there was an image in the location of the prepunched holes, then this toner is deposited on the back of the next page printed. Open and close the front door to complete a printer self-cleaning cycle.
	There might be an undetected jam in the printer. Open and close the front door to allow the printer to clear the jam. If the problem persists, remove the transfer drum. Look between the drum surface and the drum handles for a piece of media. Remove any media, and then reinstall the transfer drum.

Problem	Cause and Solution
Uneven dark areas or lines in solid fill areas on transparencies 	You are using a transparency that is outside the specifications for this printer. Use HP brand transparencies to produce the best image quality for the printer. For media specifications, see “Supported Media Weights and Sizes for Input Trays” in chapter 3.
Repetitive defects 	The printer should be cleaned. Open and shut the front door of the printer to complete a printer self-cleaning cycle. If the problem persists, see “Cleaning the Transfer Drum” later in this chapter.
	If the previous page printed was a prepunched media and there was an image in the location of the prepunched holes, then toner will be deposited on the back of the next page printed. Open and close the front door to complete a printer self-cleaning cycle.
	Repeating spots or specks of the same size and shape appear on almost all pages in the same area of the page. The repeating defects will generally be dark gray or black. If the defect is not acceptable, cleaning or replacing the imaging drum or the transfer drum might be necessary. If the defect occurs one or more times on each letter- or A4-sized page, the imaging drum should be replaced. If the defect occurs on every other letter- or A4-sized page, then the transfer drum should be cleaned. For information on cleaning the transfer drum, see “Cleaning the Transfer Drum” later in this chapter. If cleaning the transfer drum does not correct the problem, replace the transfer drum or contact a local authorized HP dealer or service representative for service. For more information on replacing the imaging drum or the transfer drum, see the installation guide included with the drum kit or transfer kit.
	Unwanted marks of the same size and shape appear more than once in the same vertical area on transparencies only. The fuser roller is damaged. Replace the fuser. For more information on replacing the fuser, see the installation guide included with the fuser kit.
Irregular wavy patterns 	Irregular wavy patterns in solid fill backgrounds might indicate that the transfer charger needs to be cleaned. For more information on cleaning the transfer charger, see “Cleaning the Transfer Charger” later in this chapter.

Cleaning the Density Sensor







Clean the density sensor after replacing the imaging drum and when printed colors are inaccurate.

To clean the density sensor

1. Open the upper right door.
2. Use the brush located next to the sensor to remove all toner particles from the sensor.

Note

You can also use a hand wipe to clean the density sensor. To prevent scratches on the sensor, do not use any paper products, such as tissue or paper towels, to clean the sensor.

3. Close the upper right door.

Troubleshooting with Print Quality Test Pages

Several print quality test pages have been included on CD-ROM 2 to aid in print quality troubleshooting. These files are found in the PQ directory on the CD-ROM.

To determine the cause of horizontal lines or streaks

1 Print five copies of the test page VERT100.ps.

- If using Microsoft Windows 95 or Windows NT, find the file in Explorer. Drag and drop the file to the printer.
- If using Windows 3.x or MS-DOS, go to the DOS prompt and type:
  `COPY <file name> \\<server name>\<printer name>`
- If using Mac OS, select the file in the Finder. From the **File** menu, choose **Print**.
- If using UNIX, go to the UNIX prompt and type:
  `lp -d<printer name> <file name>`

2 Inspect the last page of the printout for a dark line through the color bars.
If no dark line appears, the defect cleared itself with continued printing.
If a dark line appears, use the following table to determine which toner cartridge is defective.

Defect Appears in Colors	Toner Cartridge to Replace
Red/Yellow/Green	Yellow
Red/Magenta/Blue	Magenta
Cyan/Green/Blue	Cyan

3 Replace the toner cartridge indicated in the table.

For more information on installing a toner cartridge, see the installation guide included with the toner cartridge.

Cleaning the Transfer Drum

Perform these procedures only when there is an unacceptable repetitive defect and the only other solution is replacing the transfer drum. Many, but not all, repetitive defects can be removed using the following procedures. Defects that appear as light spots in dark areas of print are more likely to be corrected by this procedure than dark spots in unprinted areas. **If the procedures are performed incorrectly or without proper care, the transfer drum can be permanently damaged.**

These procedures require the following items:

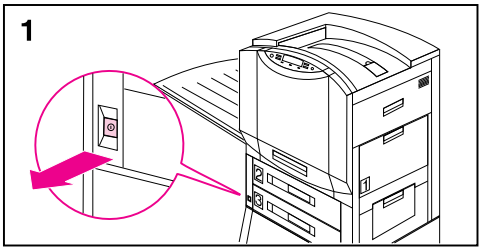
- A print sample showing the repetitive defect
- A clean, flat surface to work on
- Isopropyl alcohol
- A hand wipe

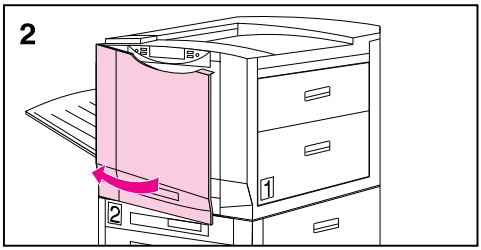
Caution

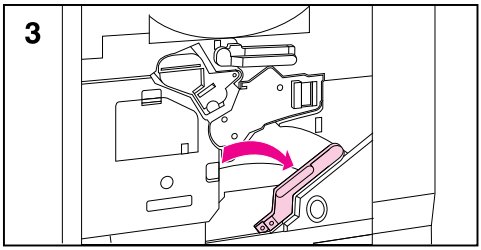
You can also use a dry, clean, soft, lint-free cloth, such as cheesecloth, to clean the transfer drum. To prevent scratches on the drum, do not use any paper products, such as tissue or paper towels, to clean the drum.

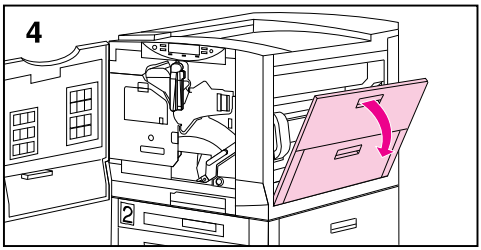
Do not expose the drum to direct sunlight. Exposure to light for more than a few minutes can permanently damage the drum. For extended periods outside the printer, place the drum in a closed drawer, return it to the original packaging, or cover it completely with a cloth.

Make sure you have a clean work area free of sharp or rough objects that might damage the drum. To avoid damaging the drum, remove all jewelry and watches before continuing. Contact with any of these items can cause permanent damage.



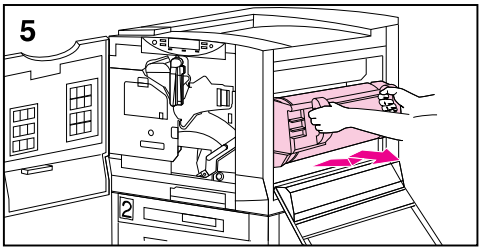


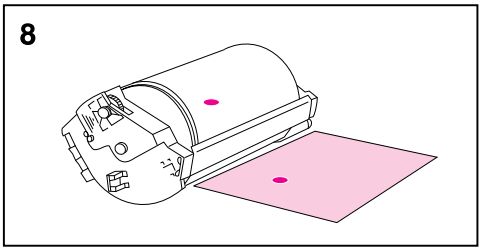


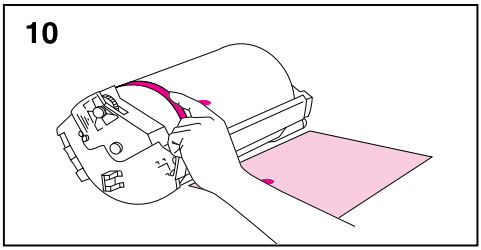


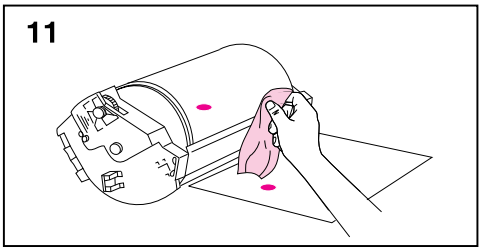
To clean the transfer drum

1. Turn the printer off (button out).
2. Open the front door.
3. Press the button on the lower (green) lever and swing the lever to the right.
4. Open the upper right door.









5 Using the handles, pull the transfer drum out of the printer.

6 Place the drum on a clean, smooth surface that is free of sharp or rough objects.

7 Face the drum surface towards you (the handles will be away from you).

8 Center the print sample beside the transfer drum with the top of the page toward the transfer drum.

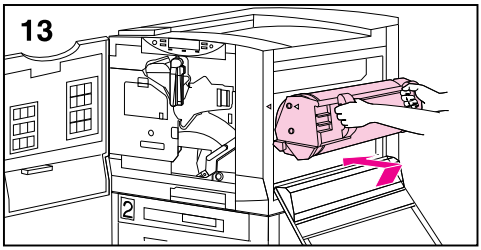
9 Using the print sample as a reference, inspect the transfer drum for a small spot or speck that might be causing the repetitive defects.

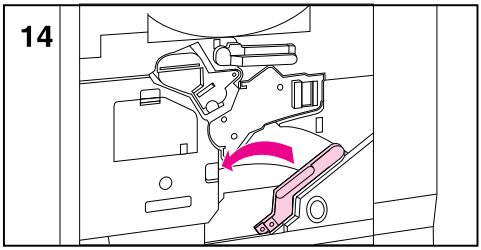
10 To locate the spot or speck, you might have to rotate the transfer drum by turning the shiny metal area on either side of the transfer drum surface with your fingers.

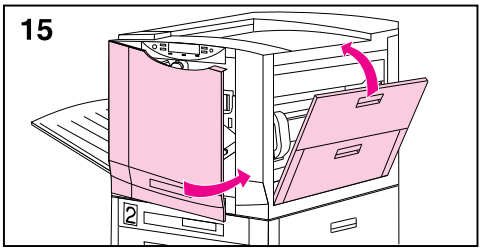
Caution

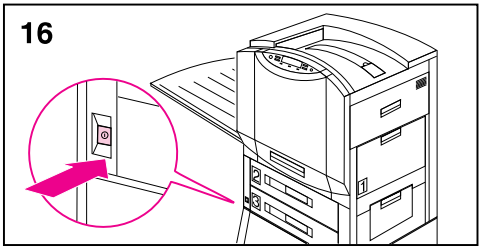
Use extreme care when removing a defect from the transfer drum. Using a sharp object to remove the defect or allowing fingernails or jewelry to touch the transfer drum can scratch the drum, causing permanent damage. Do not clean the transfer drum using force. Do not use any water-based cleaners or excessive alcohol. These actions can permanently damage the transfer drum.

11 Gently rub the spot or speck with a hand wipe.









12 If the speck does not come off, dampen the hand wipe with isopropyl alcohol. Use the hand wipe to remove the spot or speck from the transfer drum.

Note

If you used isopropyl alcohol to clean the transfer drum, you might need to print 50 to 100 pages to clean any residual isopropyl alcohol from the transfer drum.

13 To reinstall the transfer drum, align the arrows on the ends of the drum with the matching arrows on the tracks inside the printer, and then push the drum into the printer.

14 Swing the lower (green) lever to the left, making sure it clicks into place.

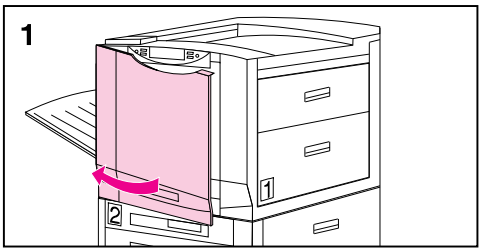
15 Close the right and front doors.

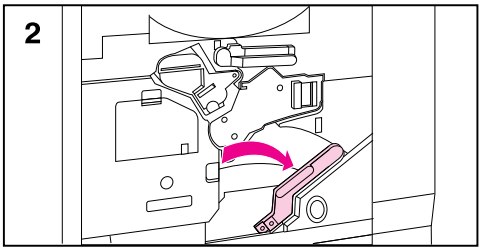
16 Turn the printer on (button in).

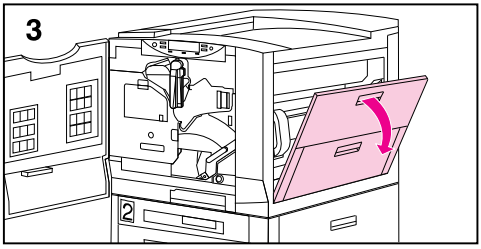
17 When the printer control panel displays READY, reprint the print job to verify the repetitive defect has been eliminated.

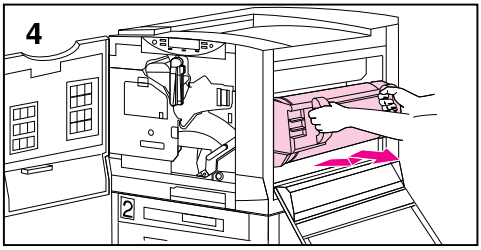
If cleaning does not eliminate the repetitive defect, contact a local authorized HP dealer or service representative for service.

Cleaning the Post Charger





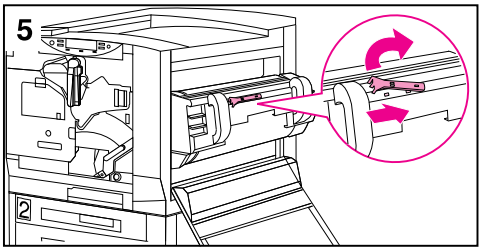


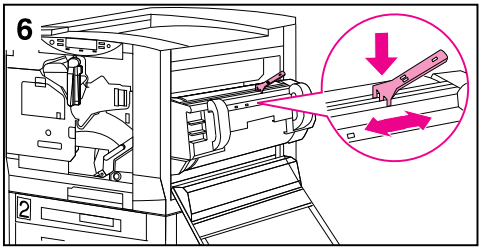


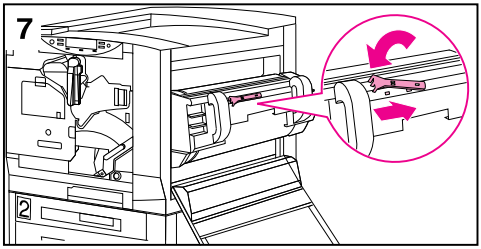
Clean the post charger on the transfer drum if there is light streaks in halftone areas.

To clean the post charger

1. Open the front door.
2. On the lower (green) lever, push the white button and swing the lever to the right.
3. Open the upper door on the right side of the printer.
4. Pull the transfer drum out until it stops.







5 Locate the post charger cleaner by the left handle on the transfer drum. To remove the post charger cleaner, lift the left side of the cleaner and slide the cleaner to the left.

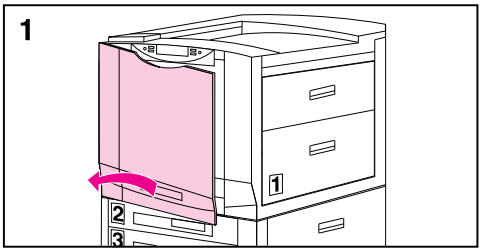
6 Insert the cleaner into the slot on the metal bar that runs between the transfer drum handles and slide the post charger cleaner across the bar several times.

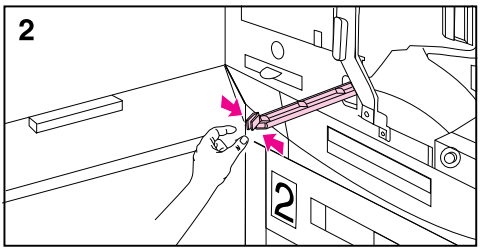
7 Replace the cleaner.

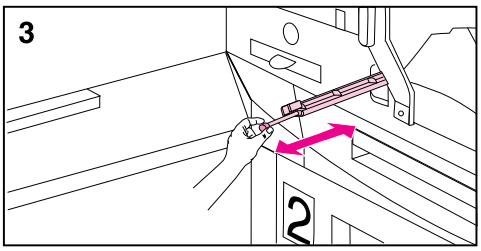
8 Reinstall the transfer drum.

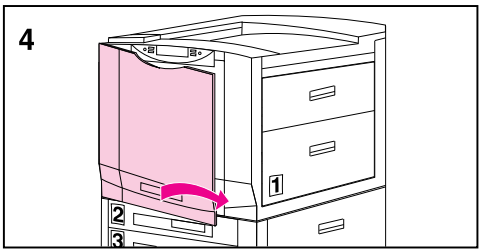
9 Close the upper right door, swing the lower (green) lever to the left, and close the front door of the printer.

Cleaning the Transfer Charger









Clean the transfer charger when irregular wavy patters appear in solid backgrounds.

To clean the transfer charger

1. Open the front door.
2. Find the knob below the transfer charger.
3. Pull the knob out and push it back in.
4. Close the front door.

Accessories, Options, and Related Products

As your printing and networking needs grow, you can increase the printer's capabilities by adding accessories and options. To order accessories or options for the printer, call HP's Direct Marketing Division (see the front of this guide for ordering information).

Part	Part Number	Type / Size
Memory	C2985A	Printer Hard Disk
	C4140A	Synchronous 4 MB DIMM*
	C4141A	Synchronous 8 MB DIMM*
	C4142A	Synchronous 16 MB DIMM*
EIO Accessories	J3110A	Ethernet 10 Base-T
	J3111A	Ethernet Combo (10 Base-T, BNC, and LocalTalk)
	J3112A	Token Ring
	J3113A	10/100 Base-TX
Paper Handling Accessories	C4782A	Duplexer
	C4785A	Multi-bin Mailbox**
Printer Supplies	C4149A	Black Toner Cartridge
	C4150A	Cyan Toner Cartridge
	C4151A	Magenta Toner Cartridge
	C4152A	Yellow Toner Cartridge
	C4153A	Drum Kit Imaging Drum 2 Air Filters Hand Wipe
	C4154A	Transfer Kit Transfer Drum Transfer Belt Cleaning Roller Charcoal Filter Hand Wipe
	C4155A	110 Volt Fuser Kit Fuser Paper Rollers Hand Wipe

Part	Part Number	Type / Size
(Printer Supplies, continued)	C4156A	220 Volt Fuser Kit Fuser Paper Rollers Hand Wipe
Cables	C2946A	IEEE-1284 compliant parallel cable of 3 m (approximately 10 ft) with 25-pin male/micro 36-pin male (”C” size) connector
	92215S	Macintosh DIN-8 printer cable
	92215N	HP LocalTalk Cable Kit
Media	C2934A	HP Color LaserJet Transparency (letter), 50 sheets
	C2936A	HP Color LaserJet Transparency (A4), 50 sheets
Reference Materials	5010-6394	*HP LaserJet Printer Family Paper Specifications Guide*
	5021-0337	PCL/PJL Technical Reference Package***

* You must install DRAM DIMMs in synchronized pairs, for example two 4 MB DIMMs.
** You must have a 2,000 sheet input tray (tray 4) installed in the printer in order to install a multi-bin mailbox.
*** This package contains information on PCL and PJL.

Check with a local authorized HP dealer about ordering the following HP products:

- HP Multipurpose paper
- HP LaserJet paper
- HP premium glossy paper

Appendix A

DIMM Installation

Supported DIMMs

The printer supports the following types of DIMMs (dual inline memory modules):

- ROM
- Synchronous DRAM

EDO (extended data out) or Fast Page Mode DIMMs are not supported.

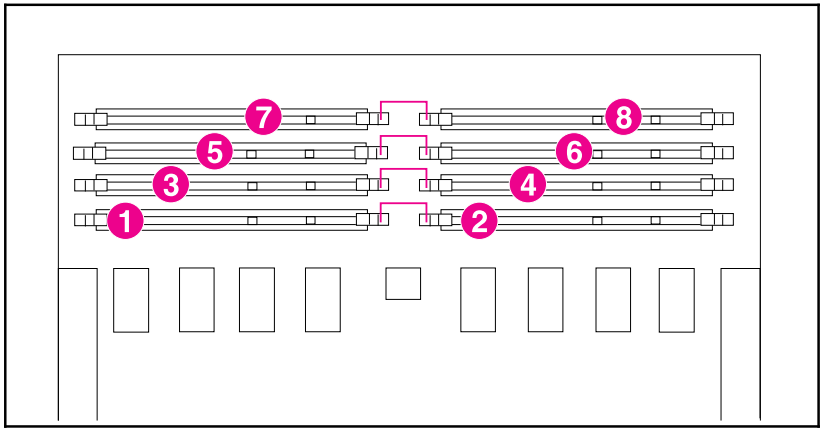
Installing DIMMs

The printer supports ROM and synchronous DRAM DIMMs. ROM DIMMs need not be installed in a specific configuration. For example, a ROM DIMM can be installed in slots 1 and 3, and slot 2 can be empty. However, ROM DIMMs cannot be installed as pairs (in corresponding left and right slots).

DRAM DIMMs must be installed in synchronized pairs: two DIMMs with the same amount of DRAM are installed in facing left and right slots (such as slots 1 and 2).

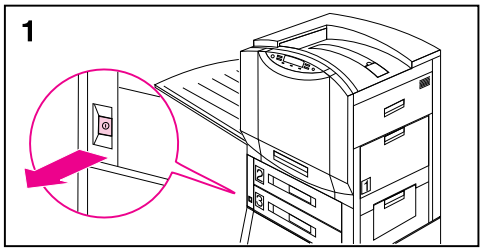
The following graphic shows the slot configuration.

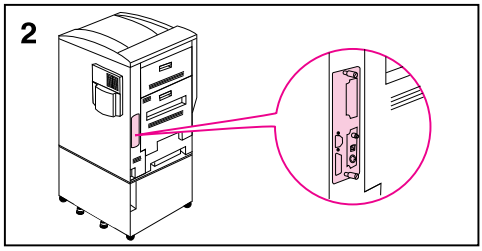
Figure 20

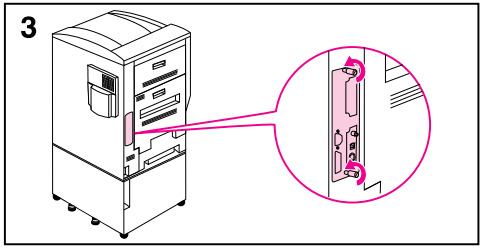


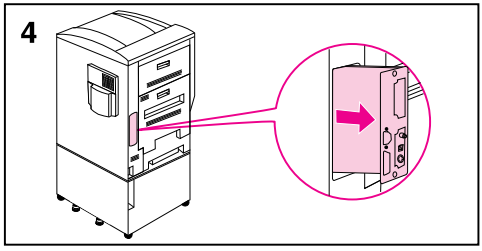
1	Slot 1	Slots 1 and 2 are paired slots for DRAM installation.
2	Slot 2	
3	Slot 3	Slots 3 and 4 are paired slots for DRAM installation.
4	Slot 4	
5	Slot 5	Slots 5 and 6 are paired slots for DRAM installation.
6	Slot 6	
7	Slot 7	Slots 7 and 8 are paired slots for DRAM installation.
8	Slot 8	

The printer comes with 6 MB DIMMs installed in slots 1 through 4. Slots 5 through 8 are available for additional DIMMs.









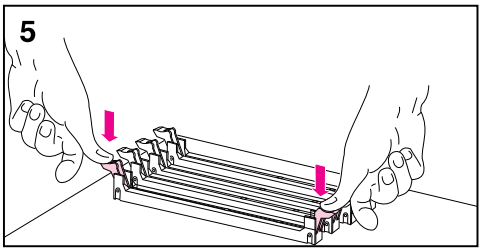
To install a DIMM

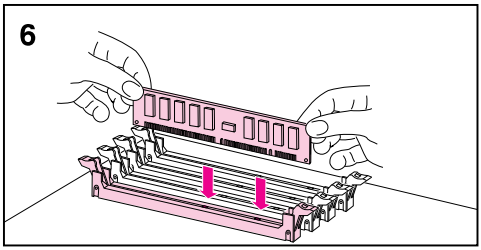
1. Turn the printer off and disconnect the printer from its power source.
2. Locate the communication board on the back left of the printer.

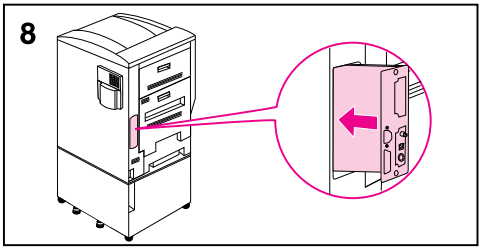
Caution

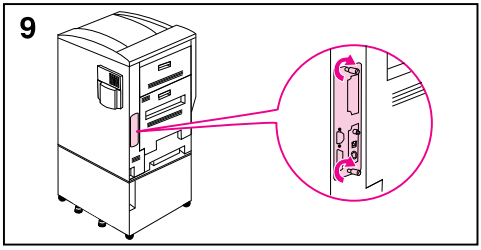
Wear an electrostatic discharge (ESD) wrist strap or touch the surface of the antistatic package to ground yourself before removing the board from its package. When handling the board, wear an ESD wrist strap or frequently touch bare metal on the printer.

3. Loosen the two thumb screws by hand or with a #2 Phillips screwdriver.
4. Slide out the board, and lay it on a flat, grounded surface. The DIMM slots are paired as shown in figure 20.









5 Push the levers down on the slots where you are going to load DIMMs.

Note

DRAM DIMMs must be loaded in pairs of the same size (such as two 8 MB chips) in the right and left slots. ROM DIMMs cannot be paired.

6 Match the notches on the slot with connectors on the DIMM, and firmly push the DIMM into the slot. The levers will lock automatically when the DIMM is correctly installed.

7 Repeat steps 5 and 6 for each DIMM you are installing.

8 Insert the board into the printer, making sure that the edges of the board line up with the guides in the printer.

9 Tighten the thumb screws.

10 Reconnect the power source for the printer, and turn the power on. The printer automatically changes the memory configuration to include the DIMMs.

Verify Installation

To verify successful DIMM installation, print a configuration page. If the DIMM has been installed properly, the configuration page will show the DIMM. For more information on configuration pages, see “Printing Internal Pages” in chapter 2.

If the printer control panel shows a message, see chapter 8, “Printer Control Panel Messages,” for an explanation of the message.

Appendix B

PCL Commands

Overview

Most applications do not require that you enter printer commands. If necessary, see your computer and application documentation to find the method for entering printer commands. For more information on PCL (printer control language) commands, see the *PCL Printer Language Technical Reference Manual*. (For ordering information, see "Accessories, Options, and Related Products" in chapter 9.)

PCL

PCL commands tell the printer which tasks to perform or which fonts to use. This appendix is not intended to provide complete information about PCL commands, but only to provide a quick reference for users who are already familiar with the PCL command structure.

HP-GL/2

The printer has the ability to print vector graphics using the HP-GL/2 graphics language. Printing in HP-GL/2 language requires that the printer leave PCL personality and enter HP-GL/2 mode, which can be accomplished by sending the printer a PCL code. Some applications switch printer personalities using their printer drivers.

PJL

HP's Printer Job Language (PJL) provides control above PCL and other printer personalities to change the printer default settings. The four major functions provided by PJL are:

- Printer personality switching
- Job separation
- Printer configuration
- Status feedback from the host computer

Understanding PCL Printer Command Syntax

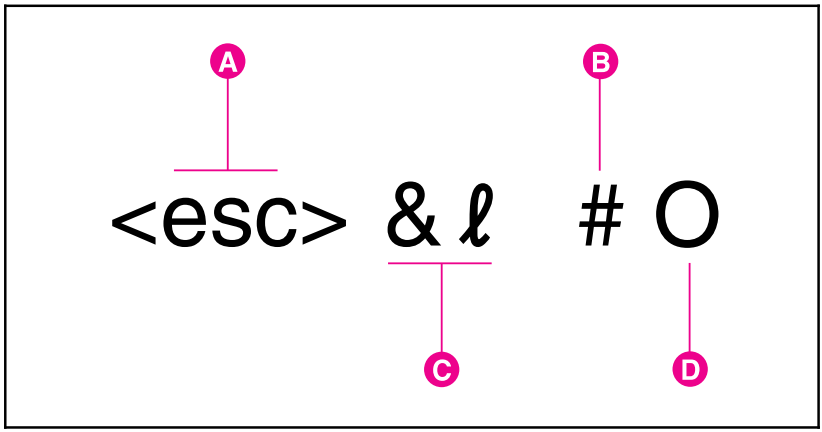
Before using printer commands, compare these characters:

Lowercase L:	ℓ	Uppercase O:	O
Number one:	1	Number zero:	Ø

Many printer commands use the lowercase letter L (ℓ) and the number one (1), or the uppercase letter O (O) and the number zero (Ø). These characters might not appear on the screen as shown here. You must use the exact character and case specified (such as uppercase or lowercase) for PCL printer commands.

The following figure shows the elements of a typical printer command (in this instance a command for page orientation).

Figure 21



A **Escape Character**—Begins the escape sequence.
B **Value Field**—Contains both alpha and numeric characters.
C **Category of Command**
D **Uppercase Letter**—Terminates escape sequence.

Combining Escape Sequences

Escape sequences can be combined into one escape sequence string. There are three important rules to follow when combining code:

1. The first two characters after each <esc> character must be the same.
2. When combining, change the uppercase (termination) character in each individual escape sequence to lowercase.
3. The final character of the escape sequence must be uppercase.

The following escape sequence would be sent to the printer to select legal media, landscape orientation, and eight lines per inch:

<esc>&ℓ3A<esc>&ℓ1O<esc>&ℓ8D

The following escape sequence sends the same printer commands by combining them into a shorter sequence:

<esc>&ℓ3a1o8D

Entering Escape Characters

Printer commands always begin with the escape character (<esc>).

The following table shows how the escape character can be entered in various applications.

MS-DOS Application	Entry	What Appears
Lotus 1-2-3 and Symphony	Type \Ø27	027
Microsoft Word for MS-DOS	Hold down Alt and type Ø27 on the numeric keypad	<—
WordPerfect for MS-DOS	Type <27>	<27>
MS-DOS Editor	Hold down Ctrl + P then Esc	<—
MS-DOS Edlin	Hold down Ctrl + V then [	^[
dBase	?? CHR(27)+“command”	?? CHR(27)+“ ”

Selecting PCL Fonts

PCL printer commands for selecting fonts can be found on the font list. (For information on printing a font list, see “Printing Internal Pages” in chapter 2.) A sample section is shown below. Note the variables for symbol sets and point size.

Font	Pitch/Point	Escape Sequence	Font #
Univers Medium	Scale	<esc>(__* <esc>(s1p__* vØsØb4148T	l011

These variables (“__”) must be filled in or the printer will use defaults. For example, for a symbol set that contains line-draw characters, select the 10U (PC-8) or 12U (PC-850) symbol set. Other common symbol set codes are listed in “Common PCL Commands” on the next page.

Note

Fonts are either “fixed” or “proportional” in spacing. The printer contains both fixed fonts (Courier, Letter Gothic, and Lineprinter) and proportional fonts (CG Times, Arial®, Times New Roman®, and others).

Fixed fonts are best used in applications such as spreadsheets and databases, where it is important for columns to line up. Proportional fonts are generally used in word processing applications.

Common PCL Commands

Function	Command	Options
Job Control Commands		
Reset	<esc> E	n/a
Number of Copies	<esc> &ℓ#X	1 to 999
Duplex/Simplex (double-sided/single-sided)	<esc> &ℓ#S	0 = Simplex (1-sided) printing 1 = Duplex (2-sided) with long-edge binding 2 = Duplex (2-sided) with short-edge binding
Page Control Commands		
Paper Destination	<esc> &ℓ#G	0 = Automatic Selector 1 = Top Output Bin (face-down) 2 = Left Output Bin (face-up) 3 = Multi-bin mailbox face-up 4 = Multi-bin mailbox bin 1 5 = Multi-bin mailbox bin 2 6 = Multi-bin mailbox bin 3 7 = Multi-bin mailbox bin 4 8 = Multi-bin mailbox bin 5 9 = Multi-bin mailbox bin 6 10 = Multi-bin mailbox bin 7 11 = Multi-bin mailbox bin 8
Paper Source	<esc> &ℓ#H	0 = Prints or ejects current page 1 = Tray 2 2 = Manual feed, paper 3 = Manual feed, envelope 4 = Tray 1 5 = Tray 4 7 = Auto Select 8 = Tray 3
Paper Size	<esc> &ℓ#A	1 = Executive 2 = Letter 3 = Legal 6 = 11 by 17 inch 26 = A4 27 = A3 45 = JIS B5 72 = Double post card 80 = Monarch envelope 81 = Commercial #10 envelope 90 = DL envelope 91 = International C5 envelope 100 = Commercial B5 envelope 101 = Custom

Function	Command	Options
Orientation	<esc> &ℓ#O	0 = Portrait 1 = Landscape 2 = Reverse Portrait 3 = Reverse Landscape
Top Margin	<esc> &ℓ#E	# = Number of lines
Text Length (bottom margin)	<esc> &ℓ#F	# = Number of lines from top margin
Left Margin	<esc> &a#L	# = Column number
Right Margin	<esc> &a#M	# = Column number from left margin
Horizontal Motion Index	<esc> &k#H	1/120 inch increments (compresses print horizontally)
Vertical Motion Index	<esc> &ℓ#C	1/48-inch increments (compresses print vertically)
Line Spacing	<esc> &ℓ#D	# = lines per inch (1, 2, 3, 4, 5, 6, 12, 16, 24, or 48)
Perforation Skip	<esc> &ℓ#L	0 = Disable 1 = Enable
Cursor Positioning		
Vertical Position (Rows)	<esc> &a#R	# = Row number
Vertical Position (Dots)	<esc> *p#Y	# = Dot number (300 dots = 1 inch)
Vertical Position (Decipoints)	<esc> &a#V	# = Decipoint number (720 decipoints = 1 inch)
Horizontal Position (Columns)	<esc> &a#C	# = Column number
Horizontal Position (Dots)	<esc> *p#X	# = Dot number (300 dots = 1 inch)
Horizontal Position (Decipoints)	<esc> &a#H	# = Decipoint number (720 decipoints = 1 inch)
Programming Hints		
End of Line Wrap	<esc> &s#C	0 = Enable 1 = Disable
Display Functions On	<esc> Y	n/a
Display Functions Off	<esc> Z	n/a
Vector Graphics Switching		
Enter PCL Mode	<esc> %#A	0 = Use previous PCL cursor position 1 = User current HP-GL/2 pen position
Enter HP-GL/2 Mode	<esc> %#B	0 = Use previous HP-GL/2 pen position 1 = Use current PCL cursor position

Function	Command	Options
Font Selection		
Symbol Sets	<esc> (#U etc.	8U = HP Roman-8 Symbol Set 10U = IBM Layout (PC-8) (code page 437) Default Symbol Set 12U = IBM Layout for Europe (PC-850) (code page 850) 8M = Math-8 19U = Windows 3.1 Latin 1 9E = Windows 3.1 Latin 2 (commonly used in Eastern Europe) 5T = Windows 3.1 Latin 5 (commonly used in Turkey) 579L = Wingdings Font
Primary Spacing	<esc> (s#P	0 = Fixed 1 = Proportional
Primary Pitch	<esc> (s#H	# = Characters per inch
Set Pitch Mode	<esc> &k#S	0 = 10 4 = 12 (elite) 2 = 16.5 - 16.7 (compressed)
Primary Height	<esc> (s#V	# = Points
Primary Style[1]	<esc> (s#S	0 = Upright (solid) 1 = Italic 4 = Condensed 5 = Condensed Italic
Primary Stroke Weight[1]	<esc> (s#B	0 = Medium (book or text) 1 = Semi-bold 3 = Bold 4 = Extra Bold
Typeface[1]	<esc> (s#T	Print the font list to find the command for each internal font.

[1]Order the PCL/PJL Technical Reference Package for symbol set charts or more information.

Appendix C

PJL Commands

Overview

All of the tasks listed in this section can be performed through the HP JetAdmin software for Microsoft Windows, through the HP LaserJet utility for Mac OS, or through the printer driver. The PJL (printer job language) commands listed here are provided as an alternate way to perform these tasks. For information on other PJL commands, see the *PJL Technical Reference Manual*.

The following commands must be implemented using a MS-DOS or Windows ASCII editor. They must also be sent to the printer using a MS-DOS copy command or an ASCII file downloader utility.

Note In the following examples, <ESC> represents the escape character. For more information on using escape characters, see the *PJL Technical Reference Manual*.

Printer and Network Security Commands

This printer supports the following types of PJL security:

- **Password protection of default feature settings** prevents users from modifying the printer's default feature settings through their applications.
- **Printer control panel lock** prevents users from modifying printer control panel settings.
- **Printer hard disk lock** prevents users from writing to the printer hard disk or initiating proof and print and mopy print jobs.

PASSWORD

With this command you can use a password to protect the printer's default feature settings. Once the password protection is enabled, the DEFAULT or INITIALIZE commands are disabled unless the password is specified in the JOB command. Printer personalities, such as PCL and PostScript, are also prevented from changing default feature settings.

Secure PJL jobs (jobs that include the correct, non-zero password value in the JOB command) can use the DEFAULT and INITIALIZE commands (or printer personality commands) to set the default features, including the value of the *PASSWORD* variable, until the next EOJ (end of job) command is received.

Note Use the DINQUIRE command to check the status of the *PASSWORD* variable. @PJL DINQUIRE PASSWORD returns either ENABLED or DISABLED. You do not have to be in a secure PJL job to use the DINQUIRE command to check this variable.

Syntax: `@PJL DEFAULT PASSWORD = number <CR><LF>`

Parameters:

Parameter	Functional Range	Default
PASSWORD = *number*	1 through 65,535	N/A

- **PASSWORD = *number*.** A 0 value disables the password protection.

Example:

```
@PJL DEFAULT PASSWORD = 357 <CR><LF>
```

CPLOCK

You can “lock” the printer control panel with this command. When the printer control panel is locked, users cannot change printer control panel settings. If a user tries to change a printer control panel setting, the message ACCESS DENIED appears on the printer control panel display.

Secure PJL jobs (jobs that includes the correct, non-zero password value in the JOB command) can use the DEFAULT and INITIALIZE commands (or printer personality commands) to set the default features, including the value of the *CPLOCK* variable, until the next EOJ command is received.

The *CPLOCK* variable can only be changed from within a “secure” PJL job (a job that includes the correct, non-zero PASSWORD value in the JOB command).

Note You can use the DINQUIRE command to check the status of the *CPLOCK* variable. @PJL DINQUIRE CPLOCK returns either ON or OFF. You do not have to be in a secure PJL job to use the DINQUIRE command to check this variable.

Syntax: `@PJL DEFAULT CPLOCK = ON [OFF] <CR><LF>`

Parameters: None

Example: `@PJL DEFAULT CPLOCK = ON <CR><LF>`

DISKLOCK

You can “lock” the printer hard disk with this command. When locked, the user cannot write to the printer hard disk. It becomes read-only to prevent actions such as formatting, downloading fonts, and deleting fonts. If not locked, the printer hard disk is read/write.

Secure PJL jobs (jobs that includes the correct, non-zero password value in the JOB command) can use the DEFAULT and INITIALIZE commands (or printer personality commands) to set the default features, including the value of the *DISKLOCK* variable, until the next EOJ command is received.

The *DISKLOCK* variable can only be changed from within a “secure” PJL job. The *DISKLOCK* variable is used mainly in networked or printer-shared configurations.

Note You can use the DINQUIRE command to check the status of the *DISKLOCK* variable. @PJL DINQUIRE DISKLOCK returns either ON or OFF. You do not have to be in a secure PJL job to use the DINQUIRE command to check this variable.

Syntax: `@PJL DEFAULT DISKLOCK = ON [OFF] <CR><LF>`

Parameters: None

Example: `@PJL DEFAULT DISKLOCK = ON <CR><LF>`

Example to lock or unlock the printer control panel if a password has not been set

```
<ESC>%-12345X@PJL <CR><LF>

@PJL COMMENT **Lock [Unlock] Control Panel**
<CR><LF>

@PJL DEFAULT CPLOCK = ON [OFF] <CR><LF>

@PJL DINQUIRE CPLOCK <CR><LF>

@PJL EOJ <CR><LF>

<ESC>%-12345X
```

Example to set the password to 399

```
<ESC>%-12345X@PJL <CR><LF>

@PJL COMMENT **Set Password** <CR><LF>

@PJL DEFAULT PASSWORD = 399 <CR><LF>

@PJL DINQUIRE PASSWORD <CR><LF>

@PJL EOJ <CR><LF>

<ESC>%-12345X
```

Example to lock or unlock the printer control panel if the password has been set

```
<ESC>%-12345X@PJL <CR><LF>

@PJL COMMENT **Lock [Unlock] Control Panel**
<CR><LF>

@PJL JOB PASSWORD = (numeric password) <CR><LF>

@PJL DEFAULT CPLOCK = ON [OFF] <CR><LF>

@PJL DINQUIRE CPLOCK <CR><LF>

@PJL EOJ <CR><LF>

<ESC>%-12345X
```

File System Commands

This printer has an optional printer hard disk that is used to store data such as fonts, macros, and other information. Preferably, the printer hard disk is managed by a host-based disk management application that supports interaction between the host software and the printer hard disk. However, users in some environments might not have a disk management application. The PJL file system commands that follow are provided to make use of printer-based mass storage when a disk management application is not available.

Note For more information about creating a host-based disk management application, contact a local authorized HP dealer.

FSAPPEND

This command is used to append data to an existing file. Or, if the file doesn't exist, the command creates the file and loads it with the given data.

Syntax:

```
@PJL FSAPPEND FORMAT:BINARY SIZE=integer
 NAME = "pathname" <CR><LF>
 <binary data><ESC>%-12345X
```

Parameters:

Parameter	Functional Range	Default
SIZE = integer	0 to 2^{31}-1	N/A
NAME = "*pathname*"	ASCII 33 through 255	N/A

- **SIZE = integer** — The size variable indicates the number of bytes in the file to be appended. The size indicates the number of bytes immediately following the <LF> to the next command.
- **NAME = *"pathname"*** — The variable *pathname* is similar to an MS-DOS filename, but it is not limited to eight characters and a three-character extension. The pathname can contain up to 100 characters per *item* in the range ASCII 33 through 255, but the first and last characters must not be a space character (ASCII 32) or ASCII 299 (0xE5). Each *item* is delimited by the backslash (\ ) character. If more than one backslash character is used (such as \ \ \ \), the file system treats them as one backslash. The maximum number of characters in a pathname is 255; the maximum number of items is 9. The volume of the PJL file system is always "0:" and is required in the pathname (see the examples below).

Note

For the FSAPPEND command, the pathname must be a file (not a directory).

Examples of valid pathnames include:

Example	Definition
0:\	Root Directory
0:\MyDir	*MyDir* directory
0:\My/Dir\Gen/Dir	*Gen*/*Dir* directory in *My*/*Dir* directory
0:\dir0\file1	*file1* file in *dir0* directory
0:\DIR1\DIR2\File1	*File1* file in *DIR2* directory in *DIR1* directory
0:\DIR1\Prefix/Suffix	*Prefix*/*Suffix* file in *DIR1* directory

- **<binary data>** — This is the binary file data to be appended or used to create a new file.

Example:

```
@PJL FSAPPEND FORMAT:BINARY
 NAME = “0:\pcl\macros\OurLogo”
 SIZE = 35<CR><LF>
35 bytes of macro data<ESC>%-12345X
```

FSDIRLIST

This command returns a list of files and directories that exist within the specified directory on the printer’s file system. This command is similar in function to the DOS DIR command. The ENTRY and COUNT parameters are used to limit the amount of data returned to the host.

Syntax:

```
@PJL FSDIRLIST NAME = “pathname”
 ENTRY = integer COUNT = integer <CR><LF>
```

Parameters:

Parameter	Functional Range	Default
NAME = “*pathname*”	ASCII 33 through 255	N/A
ENTRY = integer	1 to 2^{31}-1	N/A
COUNT = integer	1 to 2^{31}-1	N/A

- **NAME = “*pathname*”** — The pathname must be a file (not a directory). For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.
- **ENTRY = integer** — Every file or subdirectory that has been created on the file system is considered an entry. The entry variable is the number of the starting entry to be displayed. For example, to display the directory listing beginning with line 5, you would use ENTRY = 5. The entry value must be greater than 0. Also, if the entry value is larger than the actual number of entries, the response will not include any entries.
- **COUNT = integer** — The count variables specifies the number of entries to be returned. If the specified count is less than the actual number of entries in the specified range, the number of actual entries will be displayed.

Example:

```
@PJL FSDIRLIST NAME = “0:\pcl\macros” ENTRY = 1
 COUNT = 25<CR><LF>
```

FSDELETE

This command is used to delete printer hard disk files.

Syntax: `@PJL FSDELETE NAME = "pathname" <CR><LF>`

Parameters:

Parameter	Functional Range	Default
NAME = "*pathname*"	ASCII 33 through 255	N/A

- **NAME="*pathname*"** — For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.

Example:

```
@PJL FSDELETE NAME = "0:\pcl\macros\Name: HP LOGO;
Application; ABC; Manufacture: XYZ; Version: 7.9; Date:
8/17/94" <CR><LF>
```

FSDOWNLOAD

This command is used to download files to the printer hard disk file system. If a file with the same name exists, the downloaded file overwrites it.

Syntax:

```
@PJL FSDOWNLOAD FORMAT:BINARY [SIZE=int] NAME =
"pathname" <CR><LF>
<binary data><ESC>%-12345X
```

Parameters:

Parameter	Functional Range	Default
SIZE = *int*	0 to 2^{31}-1	N/A

- **SIZE=*int*** — The size variable indicates the number of bytes in the file to be downloaded. The size indicates the number of bytes immediately following the <LF> to the next UEL command.
- **NAME="*pathname*"** — For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.
- **<binary data>** — This is the binary file data to be downloaded, such as font files and macro data.

Example:

```
@PJL FSDOWNLOAD FORMAT:BINARY NAME =
"0:\pcl\macros\Name: HP LOGO; Application; ABC;
Manufacture: XYZ; Version: 7.9; Date: 8/17/94" SIZE =
22<CR><LF>
22 bytes of macro data<ESC>%-12345X
```

FSINIT

This command is used to initialize the printer hard disk file system.

Syntax: `@PJL FSINIT VOLUME = "pathname" <CR><LF>`

Parameters:

Parameter	Functional Range	Default
VOLUME = "*pathname*"	0:	N/A

- **VOLUME = *"pathname"*** — The variable *pathname* is always "0:" as shown in the example below.

Example:

```
@PJL FSINIT VOLUME = "0:" <CR><LF>
```

FSMKDIR

This command is used to create directories on the printer hard disk file system.

Syntax: `@PJL FSMKDIR NAME = "pathname" <CR><LF>`

Parameters:

Parameter	Functional Range	Default
NAME = "*pathname*"	ASCII 33 through 255	N/A

- **NAME = *"pathname"*** — For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.

Example:

```
@PJL FSMKDIR NAME = "0:\pcl" <CR><LF>
@PJL FSMKDIR NAME = "0:\pcl\macros" <CR><LF>
```

FSQUERY

This command is used to determine whether a given entry exists within the file system, the type of entry (file or directory), and, if the entry is a file, the file size in bytes.

Syntax:

```
@PJL FSQUERY NAME = "pathname" <CR><LF>
```

Parameters:

Parameter	Functional Range	Default
NAME = "*pathname*"	ASCII 01 through 255	N/A

- **NAME = *"pathname"*** — For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.

Example:

```
@PJL FSQUERY NAME = "0:\pcl\file1" <CR><LF>
@PJL FSQUERY NAME = "0:\pcl\macro\" <CR><LF>
```

FSUPLOAD

This command uploads a file, or part of a file, from the printer file system to the host.

Syntax:

```
@PJL FSUPLOAD NAME = "pathname"
 OFFSET = <number> SIZE = <number> <CR><LF>
```

Parameters:

Parameter	Functional Range	Default
NAME = "*pathname*"	ASCII 33 through 255	N/A
OFFSET = *integer*	0 to 2^{31}-1	N/A
SIZE = *integer*	0 to 2^{31}-1	N/A

- **NAME = *"pathname"*** — For a complete description of the NAME parameter, see the NAME = pathname description under the FSAPPEND command earlier in this chapter.
- **OFFSET = *integer*** — The offset variable specifies the file location from which to begin uploading.
- **SIZE = *integer*** — The size variable indicates the number of bytes to be uploaded. If the amount of data in the file after OFFSET is less than the specified size value, the remainder of the file is returned, and the SIZE value in the response indicates the actual amount of uploaded data.

Example:

```
@PJL FSUPLOAD NAME = "0:\pcl\filenumber5"
 OFFSET = 25 SIZE = 512 <CR><LF>
```

Example to download and call a macro from the printer hard disk

```
<ESC>%12345X

@PJL FSMKDIR NAME =“0:\pcl” <CR><LF>

@PJL FSMKDIR NAME =“0:\pcl\macros” <CR><LF>

@PJL FSDOWNLOAD FORMAT:BINARY NAME
=“0:\pcl\macros\a_macro” SIZE=29<CR><LF>

<ESC>*p900x1500YThis is the macro <ESC>%-12345X

<ESC>&f1Y

<ESC>&n8W♣a_macro

<ESC>&f4X

<ESC>E

<ESC>%-12345X

@PJL DEFAULT DISKLOCK = ON <CR><LF>
```

Multi-bin Mailbox Commands

Before using these command strings, determine the device identification number of the multi-bin mailbox by printing a configuration page. The device identification number is located under the heading “Installed Options.” For more information on printing a configuration page, see “Printing Internal Pages” in chapter 2.

The printer must be turned off and on after sending the change mode command in order for the new mode to take effect.

DMCMD

The device management command changes the mailbox mode for the defined device.

Syntax: `@PJL DMCMD ASCIIHEX = “asciihexrequest” <CR><LF>`

Parameters:

Parameter	Functional Range	Default
ASCIIHEX = “*asciihexrequest*”	ASCII 33 through 255	N/A

- **ASCIIHEX = *“asciihexrequest”*** — This is the string that sends the command to change the mailbox mode for the device. The first ASCIIHEX command changes the mailbox mode; the second ASCIIHEX command turns the printer off and on.

Example: The underlined **3** value is the device value determined from the configuration page plus one (1).

```
@PJL DMCMD ASCIIHEX = “040007010401070303214020104”
<CR><LF>
@PJL DMCMD ASCIIHEX = “040006020501010301040105”
<CR><LF>
```

Example to switch to mailbox mode and turn the printer off and on

```
@%12345X@PJL

ORD = 10

@PJL JOB PASSWORD = 10

@PJL DMCMD ASCIIHEX =
“040007010401070303 0214020104” <CR><LF>

@PJL DMCMD ASCIIHEX =
“040006020501010301040105” <CR><LF>

@PJL DEFAULT PASSWORD = 0

@PJL EOJ

@%-12345X
```

Example to switch to stacker mode and turn the printer off and on

```
@%12345X@PJL

ORD = 10

@PJL JOB PASSWORD = 10

@PJL DMCMD ASCIIHEX =
“040007010401070303 0214020101” <CR><LF>

@PJL DMCMD ASCIIHEX =
“040006020501010301040105” <CR><LF>

@PJL DEFAULT PASSWORD = 0

@PJL EOJ

@%-12345X
```

Example to switch to separator mode and turn the printer off and on

```
@%12345X@PJL

ORD = 10

@PJL JOB PASSWORD = 10

@PJL DMCMD ASCIIHEX =
“040007010401070303021402010 2” <CR><LF>

@PJL DMCMD ASCIIHEX =
“040006020501010301040105” <CR><LF>

@PJL DEFAULT PASSWORD = 0

@PJL EOJ

@%-12345X
```

Proof and Print

This printer allows users to proof one copy of a print job, and then print any remaining copies of the job. A printer hard disk is required in order to use the proof and print feature.

USERNAME

The user name command defines the user for the proof and print job.

Syntax: `@PJL USERNAME = "username" <CR><LF>`

Parameters:

Parameter	Functional Range	Default
USERNAME = "username"	16 ASCII characters	N/A

- **USERNAME = "*username*"** — This is the string that sends the print job owner's name to the proof and print job.

Example: `@PJL USERNAME = maria <CR><LF>`

JOBNAME

The job name command defines the document name for proof and print job.

Syntax: `@PJL JOBNAME = "jobname" <CR><LF>`

Parameters:

Parameter	Functional Range	Default
JOBNAME = *"jobname"*	16 ASCII characters	N/A

- **JOBNAME = "*jobname*"** — This is the string that sends the document name to the proof and print job.

Example: `@PJL JOBNAME = sallymemo <CR><LF>`

Example to send a proof and print job to the printer

```
@%12345X@PJL

@PJL USERNAME = john

@PJL JOBNAME = memo

@PJL QTY = 5

<Job Data>

@PJL EOJ

@%-12345X
```

Appendix D

Specifications

Electrical Specifications

	110-Volt Models	220-Volt Models
Power Requirements	100-127 V (+/– 10%) 50/60 Hz (+/– 2 Hz)	220-240 V (+/– 10%) 50/60 Hz (+/– 2 Hz)
Power Consumption (typical) **During printing (black & white)** **During printing (color)** **During idle*** **During Power Save mode**	 750 W (average) 375 W (average) 190 W (average) < 45 W	 750 W (average) 375 W (average 190 W (average) < 45 W
Minimum recommended circuit capacity for typical product	12.0 A at 120 V	6.0 A at 220 V

* When the printer is in standby (off) mode, a minimal amount of energy is still consumed. Energy consumption can be eliminated by disconnecting the printer power cord from the power source.

Operating Environment Specifications

Temperature **Recommended** **Allowed**	 68 to 79° F (20 to 26° C) 59 to 86° F (15 to 30° C)
Humidity **Recommended** **Allowed**	 20 to 50% RH 10 to 80% RH
Altitude **Allowed**	 0 to 10,000 ft (0 to 3,048 m)

Acoustic Emissions

Operation position **Printing** **Idle**	Per ISO 9296, DIN 45635,T.19 L_pA 54 dB(A) L_pA 49 dB(A)
Bystander 1m **Printing** **Idle**	Per ISO 7779, DIN 45635,T.19 L_pA 52 dB(A) L_pA 47 dB(A)
Sound Power **Printing** **Idle**	Per ISO 9296 6.8 B (A)* 6.4 B (A)
* This product emits a sound level intensity (L_{WAD}) of 6.8 bels during printing and might not be considered suitable for placement in close proximity to its users.	

Environmental Product Stewardship Program

Protecting the Environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This HP LaserJet printer has been designed with several attributes to minimize impacts on our environment.

This HP LaserJet printer design eliminates:

- **Ozone Production**
  This HP LaserJet printer contains an ozone filter to protect office air quality. See the maintenance section of this user's guide for suggested replacement intervals.

- **CFC Usage**
  Class I U.S. Clean Air Act stratospheric ozone-depleting chemicals (chlorofluorocarbons [CFCs], for example) have been eliminated from the manufacturing sites that produce this printer. This practice coincides with the 1987 "Montreal Protocol on Substances that Deplete the Ozone Layer" and its subsequent amendments. CFCs are not used in manufacturing of the packaging.

This HP LaserJet printer design reduces:

- **Energy Consumption**
  Energy usage drops from 470 watts (W) during printing to less than 45 W while in low-power (Power Save) mode. Not only does this save natural resources, but it also saves money without affecting the high performance of this printer. This product qualifies for the ENERGY STAR Program (U.S. and Japan). ENERGY STAR is a voluntary program established to encourage the development of energy-efficient office products. ENERGY STAR is a U.S. registered service mark of the U.S. EPA.

As an ENERGY STAR partner, Hewlett-Packard Company has determined that this product meets ENERGY STAR Guidelines for energy efficiency.

- **Paper Usage**
  The printer's optional automatic duplexing feature, which provides for two-sided printing, reduces paper usage and the resulting demands on natural resources.

The design of this HP LaserJet printer facilitates the recycling of:

- **Plastics**
  Major plastic parts have markings that enhance the ability to identify plastics for recycling purposes at the end of the printer's life. The plastics used in the printer housing and chassis are technically recyclable.
- **HP Toner Cartridges/Photoconductive Drum**
  In many countries/regions, this product's toner cartridge, photoconductive drum, transfer assembly, and fuser can be returned to HP at the end of each item's useful life. A prepaid shipping label and instructions on how to return the toner cartridge/drum are included with the replacement toner cartridge/drum. If your country/region is not listed in the replacement's brochure, call a local HP Sales and Service Office (see appendix E) for further instructions.

HP Cartridge Recycling Program Information:

Since 1990, the HP LaserJet Toner Cartridge Recycling Program has collected more than twelve million cartridges that otherwise would have been discarded into landfills or similar facilities. This rapidly growing program returns used cartridges to the manufacturing process, thus conserving a variety of resources. Once a cartridge is returned through the prepaid return program, it is disassembled. The reusable components and the plastic housing are cleaned and inspected for quality conformance. After passing strict inspection procedures, materials such as nuts, screws, and clips are reclaimed and used to produce new cartridges. Remaining materials, like the photoconductive drum, are melted down and used as raw materials for a variety of other products. By weight, over 95 percent of the materials returned are recycled. All HP LaserJet Toner Cartridges are shipped in recycled boxes with the entire box being recyclable through the returns program. For more information in the U.S., call (1) (800) 340-2445 or contact the HP LaserJet Website at http://www.ljsupplies.com/planetpartners/. For more information on bulk returns in the U.S., call (1) (800) 340-2445. International customers can call a local HP Sales and Service Office (see appendix E) for further information regarding the HP Toner Cartridge Recycling Program.

- **Printer and Parts**
  Design for recycling has been incorporated into this printer and its accessories. The number of materials has been kept to a minimum while ensuring proper functionality and high product reliability. Dissimilar materials have been designed to separate easily. Fasteners and other connections are easy to locate, access, and remove with common tools. High-priority parts have been designed to be accessed quickly for efficient disassembly and repair. Plastic parts have been primarily designed in two colors to enhance recycling options. A few small parts are colored specifically to highlight customer access points.

  HP provides a product return system for customers in Germany. Many of the functional parts are recovered, tested, and reused as fully-warranted service parts. Used parts are not placed into new product manufacturing. The remainder of the product parts are recycled, if possible. For product return information in Germany, call (49) (070) 3114-1936 or fax (49) (070) 3114-4195.

- **Paper**
  - This printer is suited for the use of recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Paper Specifications Guide*, HP part number 5010-6394. This printer is suited for the use of recycled paper according to DIN 19 309.
  - The user's guide is provided on CD-ROM, which allows the same high-quality information to be provided without consuming the large quantities of energy and natural resources required to produce traditional paper manuals.

To ensure longevity of your HP LaserJet printer, HP provides the following:

- **Extended Warranty**
  HP SupportPack provides coverage for the HP hardware product and all HP-supplied internal components. The hardware maintenance covers a three-year period from date of the HP product purchase. HP SupportPack must be purchased by the customer within 30 days of the HP product purchase. Information on HP SupportPack is available in fax format by calling the U.S. HP FIRST (Fax Information Retrieval Support Technology) at (1) (800) 333-1917 (for worldwide HP FIRST numbers, see the front of this manual). The document number is 9136. International customers can contact the nearest HP dealer about this service.

- **Spare Parts and Consumables Availability**
  Spare parts and consumable supplies for this product will be made available for at least five years after the product has been discontinued.

Regulatory Statements

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

Note

Any changes or modifications to the printer not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply within the Class B limits in Part 15 of FCC rules.

Canadian DOC Regulations

Complies with Canadian EMC Class B requirements.

<<Conforme á la classe B des normes canadiennes de compatibilité électromagnétiques. <<CEM>>.>>

Declarations of Conformity

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	11311 Chinden Boulevard Boise, Idaho 83714-1021, USA

declares, that the product

Product Name:	HP Color LaserJet 8500, 8500 N, 8500 DN
Model Number:	C3983A, C3984A, C3985A
Product Options:	ALL

conforms to the following Product Specifications:

Safety: IEC 950:1991+A1+A2+A3 / EN 60950:1992+A1+A2+A3
IEC 825-1:1993 / EN 60825-1:1994 Class 1 (Laser/LED)

EMC: CISPR 22:1993+A1 / EN 55022:1994 Class B[1]
CISPR 22:1993+A1 / EN 55022:1994 Class A*
EN 50082-1:1992
IEC 801-2:1991 / prEN 55024-2:1992 - 4 kV CD, 8 kV AD
IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m
IEC 801-4:1988 / prEN 55024-4:1992 - 0.5 kV Signal Lines
1.0 kV Power Lines
IEC 1000-3-2:1995 / EN61000-3-2:1995
IEC 1000-3-3:1994 / EN61000-3.3:1995
FCC Title 47 CFR, Part 15 Class B[2]/ICES-003, Issue 2/VCCI-2[1]
AS / NZS 3548:1992 / CISPR 22:1993 Class [1]

Supplementary Information:

The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly:
- the EMC directive 89/336/EEC
- the Low Voltage Directive 73/23/EEC

[1] The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
[2] This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

*This printer contains Local Area Network (LAN) options. When the interface cable is attached to either of the IEEE 802.3 connectors, the printer meets the requirements of EN55022 Class A.

February 12, 1997

For Compliance Information ONLY, contact:

Australia Contact:	Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia
European Contact:	A Local Hewlett-Packard Sales and Service Office or Hewlett-Packard Gmbh, Department HQ-TRE / Standards Europe, Herrenberger Strasse 130, D-71034 Böblingen (FAX: +49-7031-14-3143)
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, P.O. Box 15 Mail Stop 160, Boise, ID 83707-0015 (Phone: 208-396-6000)

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	Montemorelos 299 Guadalajara Jalisco, 45060 México

declares, that the product

Product Name:	Duplexer
Model Number:	C4782A
Product Options:	N/A

conforms to the following Product Specifications:

Safety: IEC 950:1991+A1+A2+A3 / EN 60950:1992+A1+A2+A3
IEC 825-1:1993 / EN 60825-1:1994 Class 1 (Laser/LED)

EMC: CISPR 22:1993+A1 / EN 55022:1994 Class B[1]
CISPR 22:1993+A1 / EN 55022:1994
EN 50082-1:1992
IEC 801-2:1991 / prEN 55024-2:1992 - 4 kV CD, 8 kV AD
IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m
IEC 801-4:1988 / prEN 55024-4:1992 - 0.5 kV Signal Lines
1.0 kV Power Lines
IEC 1000-3-2:1995 / EN61000-3-2:1995
IEC 1000-3-3:1994 / EN61000-3.3:1995
FCC Title 47 CFR, Part 15 Class B[2] / ICES-003, Issue 2 / VCCI-2[1]
AS / NZS 3548:1992 / CISPR 22:1993 Class B[1]

Supplementary Information:

The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly:
- the EMC directive 89/336/EEC
- the Low Voltage Directive 73/23/EEC

[1] The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
[2] This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

July 16, 1997

For Compliance Information ONLY, contact:

Australia Contact:	Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia
European Contact:	A Local Hewlett-Packard Sales and Service Office or Hewlett-Packard Gmbh, Department HQ-TRE / Standards Europe, Herrenberger Strasse 130, D-71034 Böblingen (FAX: +49-7031-14-3143)
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, P.O. Box 15 Mail Stop 160, Boise, ID 83707-0015 (Phone: 208-396-6000)

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	Montemorelos 299 Guadalajara Jalisco, 45060 México

declares, that the product

Product Name:	2000-Sheet Input Tray
Model Number:	C4781A
Product Options:	N/A

conforms to the following Product Specifications:

Safety: IEC 950:1991+A1+A2+A3 / EN 60950:1992+A1+A2+A3
IEC 825-1:1993 / EN 60825-1:1994 Class 1 (Laser/LED)

EMC: CISPR 22:1993+A1 / EN 55022:1994 Class B[1]
CISPR 22:1993+A1 / EN 55022:1994
EN 50082-1:1992
IEC 801-2:1991 / prEN 55024-2:1992 - 4 kV CD, 8 kV AD
IEC 801-3:1984 / prEN 55024-3:1991 - 3 V/m
IEC 801-4:1988 / prEN 55024-4:1992 - 0.5 kV Signal Lines
1.0 kV Power Lines
IEC 1000-3-2:1995 / EN61000-3-2:1995
IEC 1000-3-3:1994 / EN61000-3.3:1995
FCC Title 47 CFR, Part 15 Class B[2] / ICES-003, Issue 2 / VCCI-2[1]
AS / NZS 3548:1992 / CISPR 22:1993 Class B[1]

Supplementary Information:

The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly:
- the EMC directive 89/336/EEC
- the Low Voltage Directive 73/23/EEC

[1] The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
[2] This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

July 16, 1997

For Compliance Information ONLY, contact:

Australia Contact:	Product Regulations Manager, Hewlett-Packard Australia Ltd., 31-41 Joseph Street, Blackburn, Victoria 3130, Australia
European Contact:	A Local Hewlett-Packard Sales and Service Office or Hewlett-Packard Gmbh, Department HQ-TRE / Standards Europe, Herrenberger Strasse 130, D-71034 Böblingen (FAX: +49-7031-14-3143)
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, P.O. Box 15 Mail Stop 160, Boise, ID 83707-0015 (Phone: 208-396-6000)

VCCI Statement (Japan)

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は，家庭環境で使用することを目的としていますが，この装置がラジオやテレビジョン受信機に近接して使用されると，受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

Korean EMI Statement

사용자 안내문 (B급 기기)

이 기기는 비업무용으로 전자파장해검정을 받은
기기로서, 주거지역에서는 물론 모든 지역에서
사용할 수 있습니다.

Safety Information

Laser Safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. This printer is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this printer is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

WARNING! **Using controls, making adjustments, or performing procedures other than those specified in this manual may result in exposure to hazardous radiation.**

Product Information Sheet

The Toner Product Information Sheet can be obtained by calling the U.S. HP FIRST (Fax Information Retrieval Support Technology) at (1) (800) 333-1917. International customers should see the front of this manual for appropriate phone numbers and information.

Material Safety Data Sheet (MSDS)

Toner Material Safety Data Sheet (MSDS) can be obtained by calling HP FIRST at (800) 333-1917. International customers should see the front of this manual for appropriate phone numbers and information.

Laser Statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP Color LaserJet 8500, 8500 N, 8500 DN laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

Varoitus!

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

Varning!

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP Color LaserJet 8500, 8500 N, 8500 DN -kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

Varo!

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

Varning!

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 775-795 nm
Teho 5 mW
Luokan 3B laser

Appendix E

Warranty and Support Information

Hewlett-Packard Warranty Statement

HP Color LaserJet 8500, 8500 N, 8500 DN	One-year limited warranty

1. HP warrants HP hardware, accessories and supplies against defects in materials and workmanship for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or like-new.
2. HP warrants that HP software will not fail to execute its programming instructions, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, customer will be entitled to a refund of the purchase price upon prompt return of the product.
4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.
5. The warranty period begins on the date of delivery or on the date of installation if installed by HP. If customer schedules or delays HP installation more than 30 days after delivery, warranty begins on the 31st day from delivery.
6. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

8. HP will be liable for damage to tangible property per incident up to the greater of $300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective HP product.

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